REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

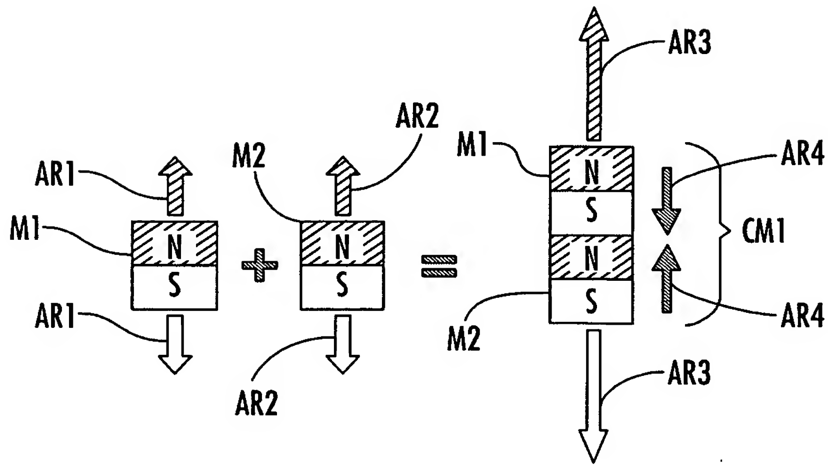


FIG. 1

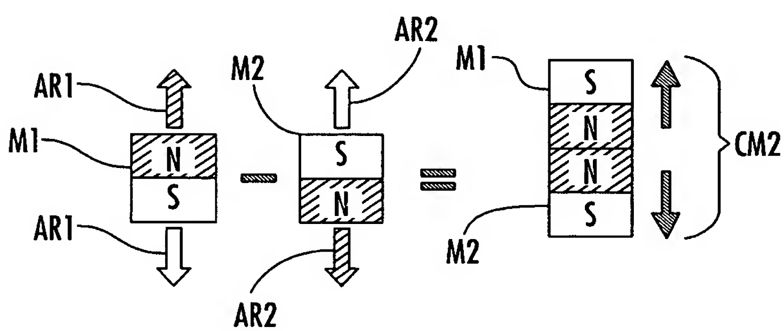


FIG. 2

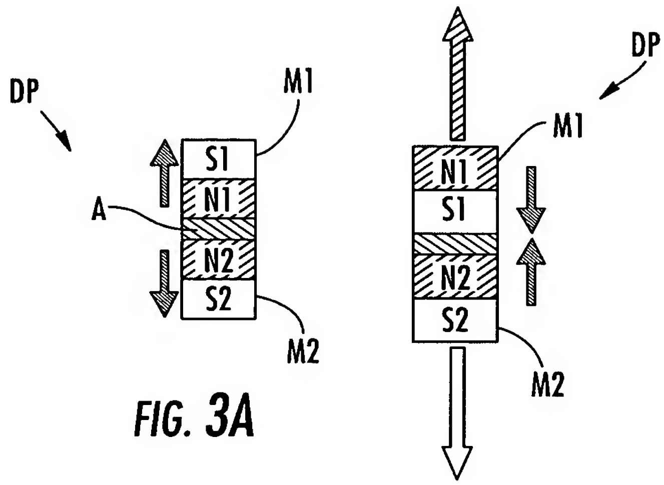


FIG. 3A

FIG. 3B

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

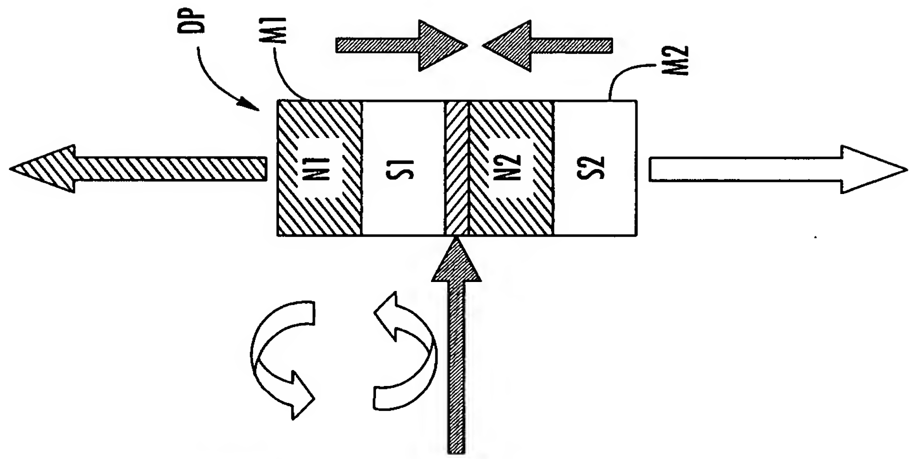


FIG. 3D

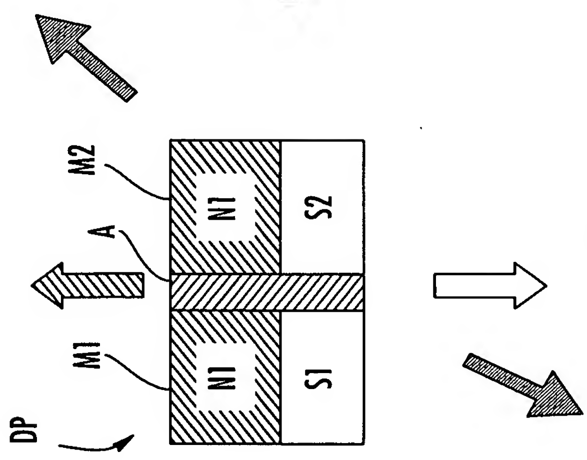


FIG. 3C

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices
for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

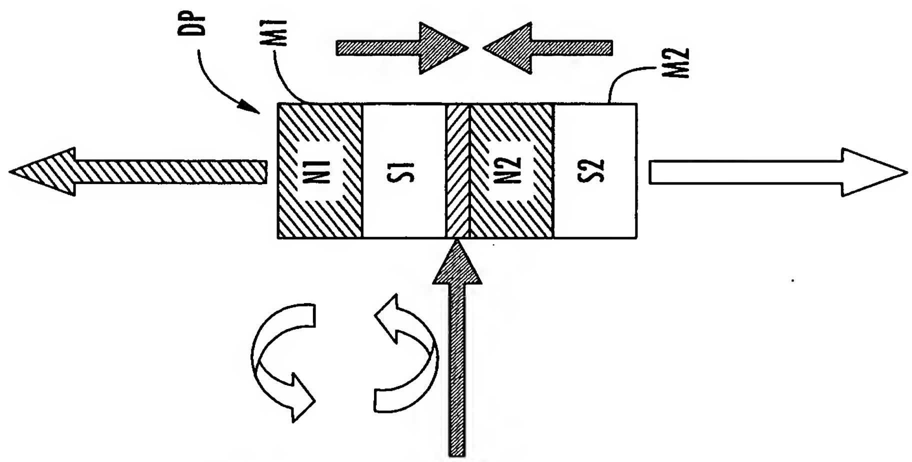


FIG. 3F

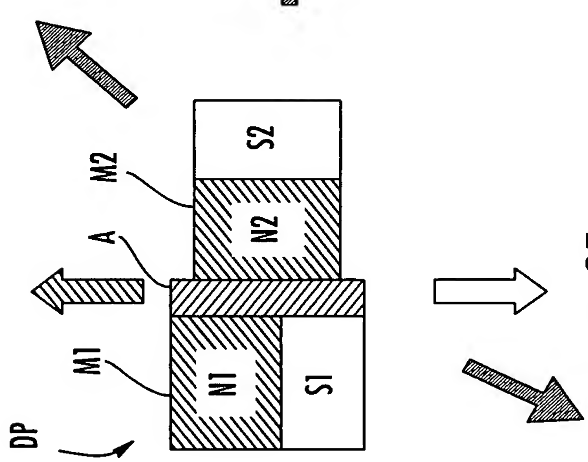


FIG. 3E

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

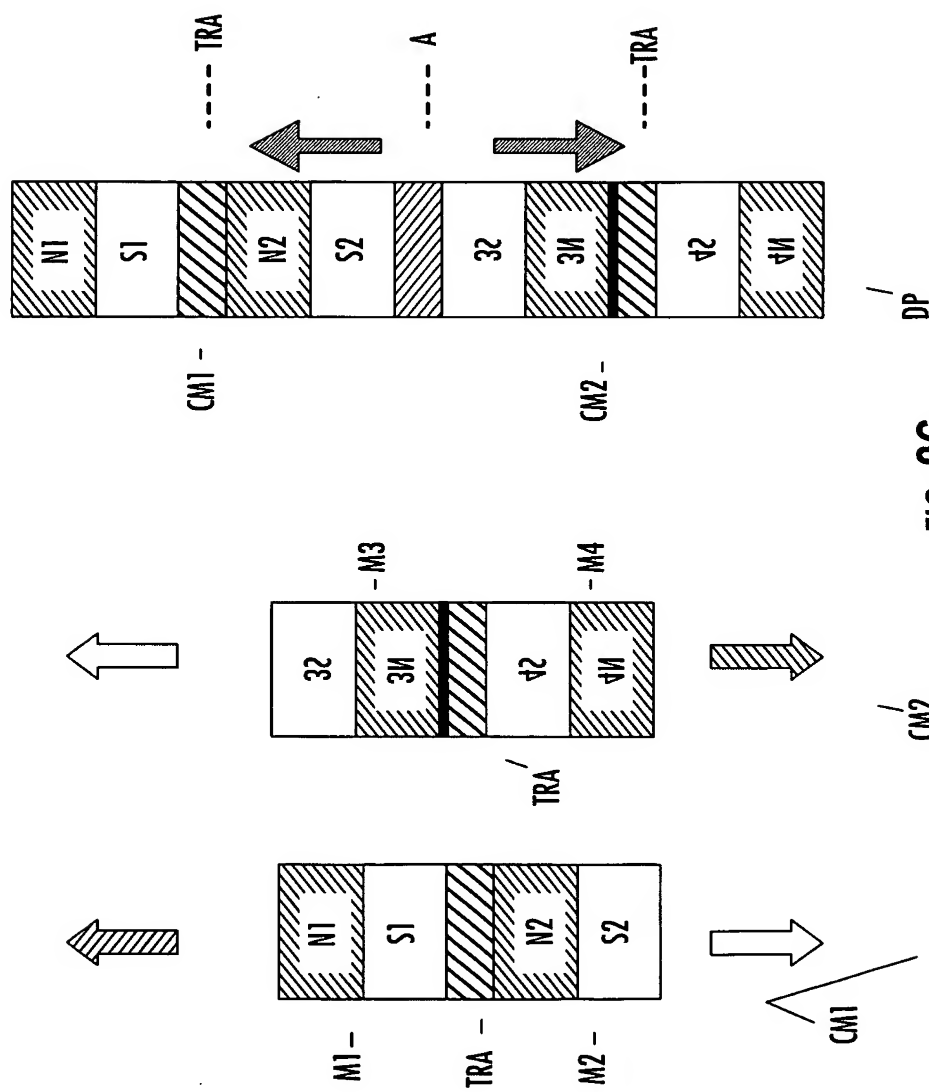


FIG. 3G

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices
for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

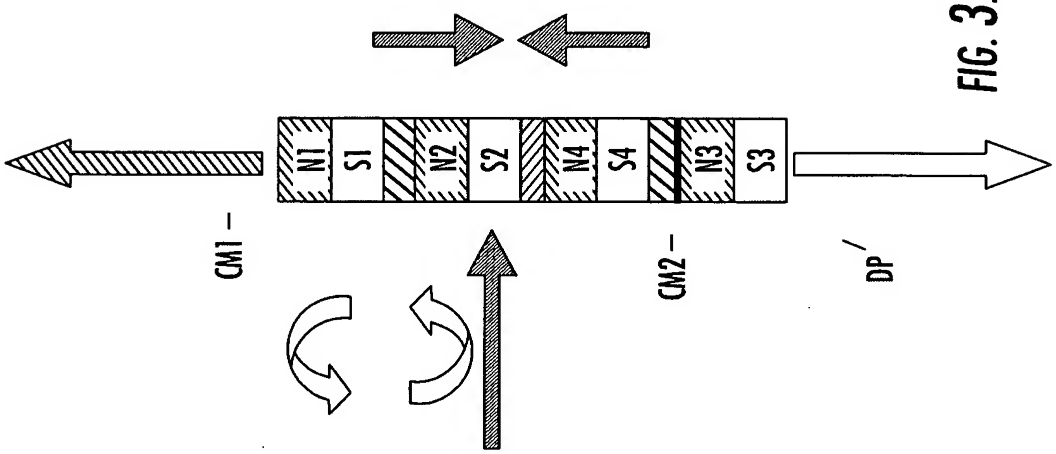


FIG. 3I

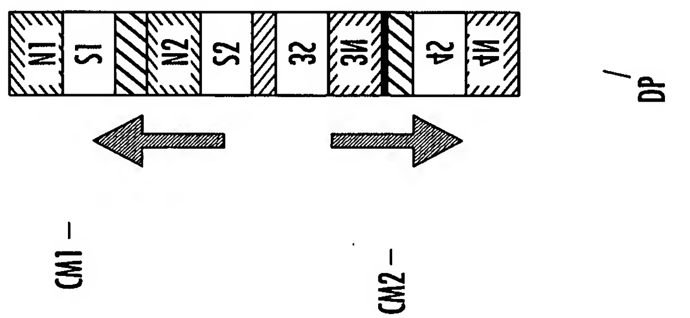


FIG. 3H

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

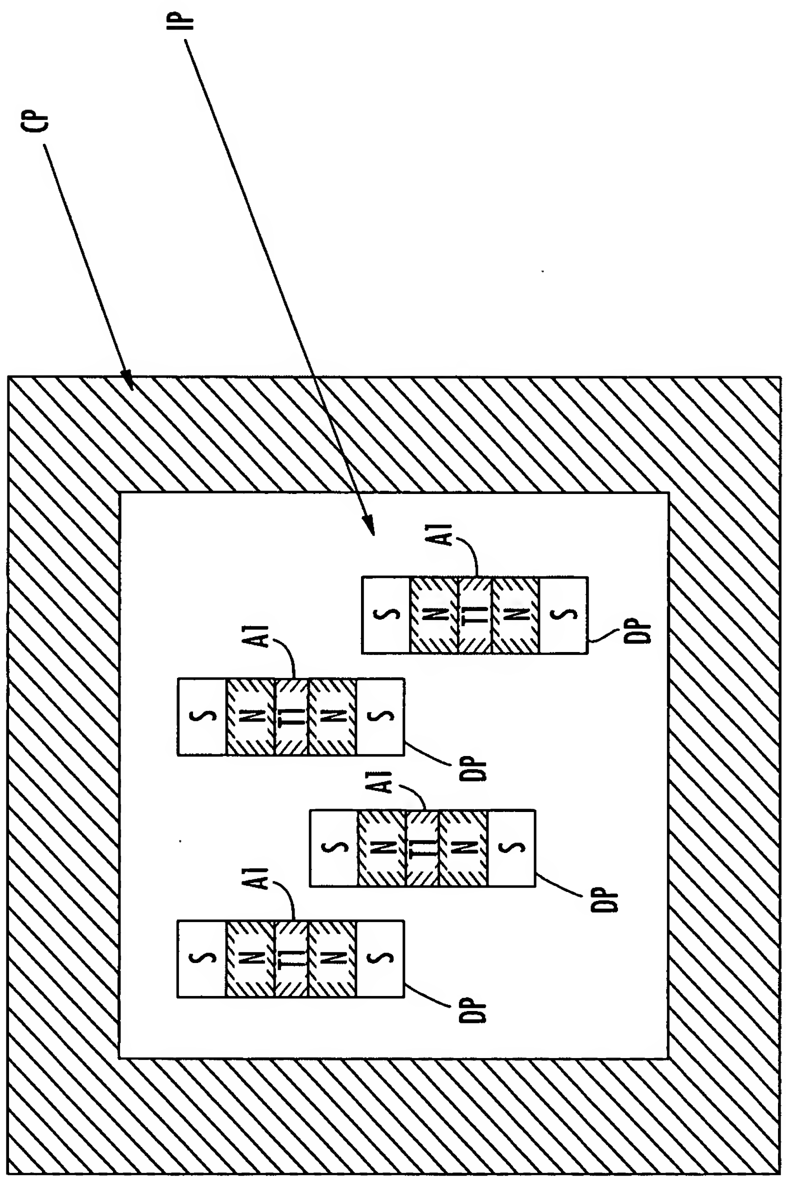


FIG. 3J

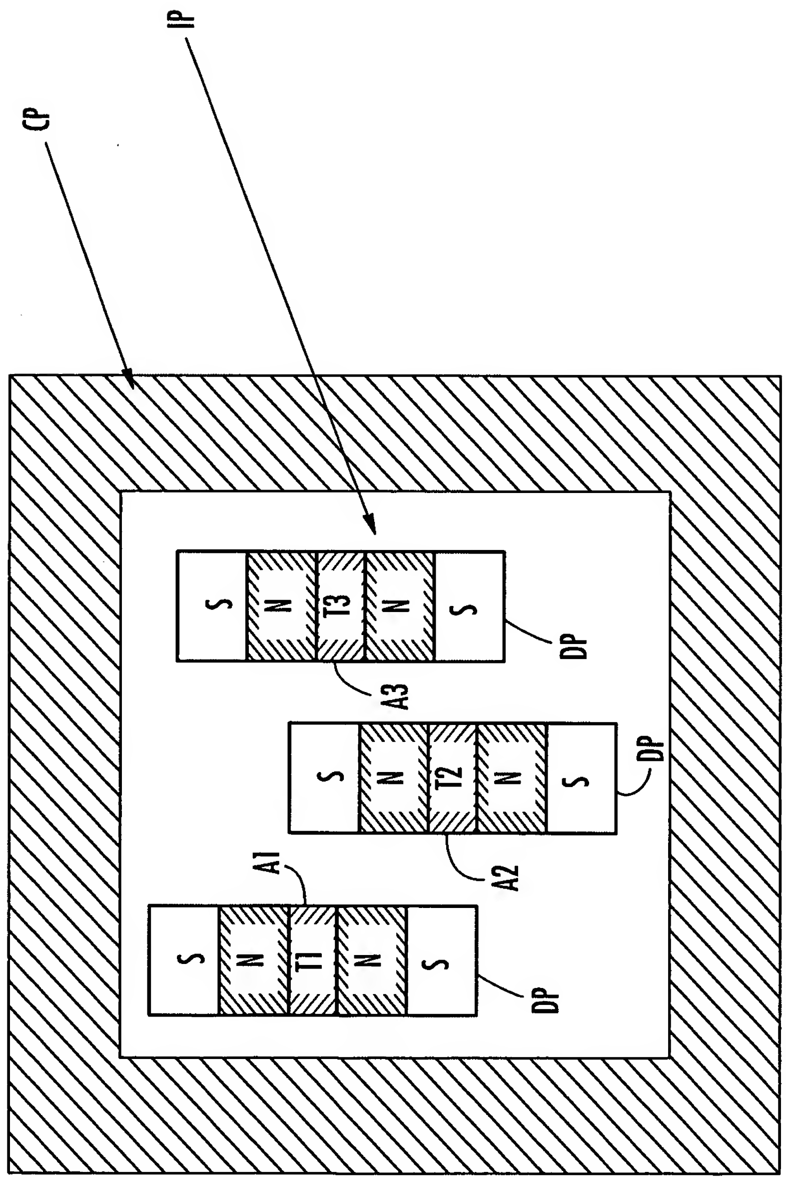


FIG. 3K

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices
for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

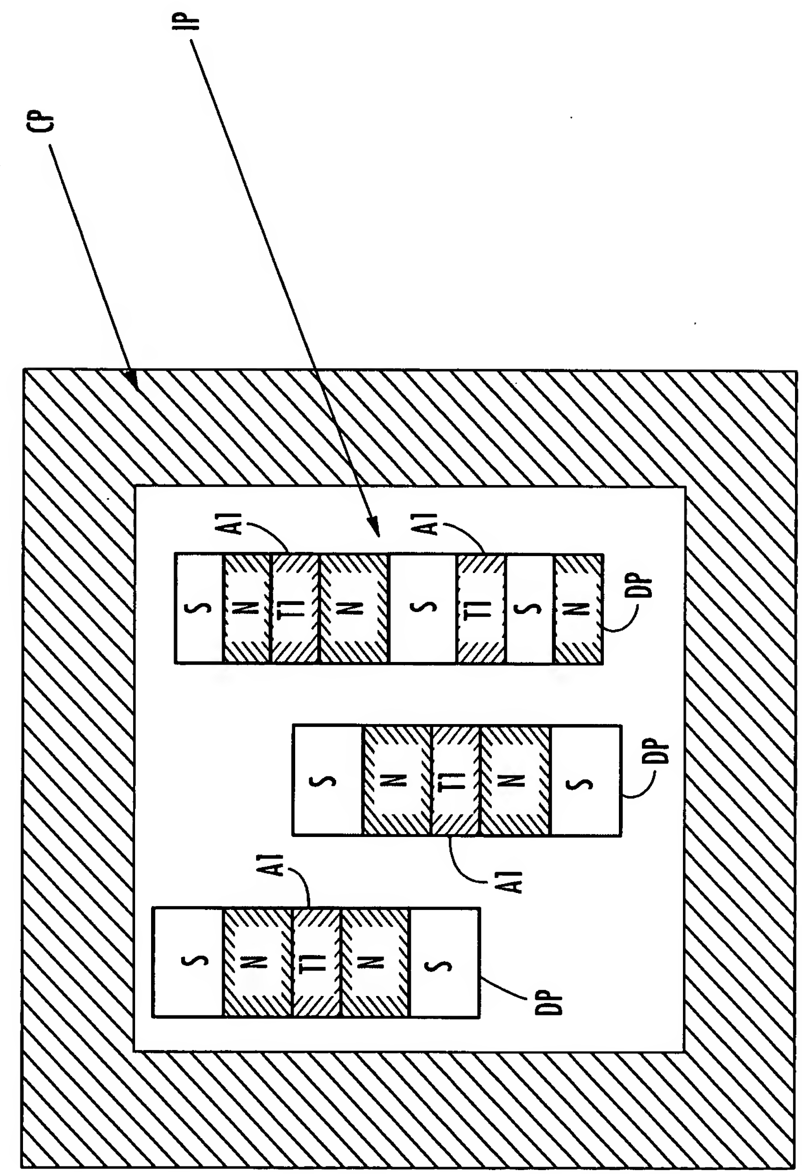


FIG. 3L

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices
for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

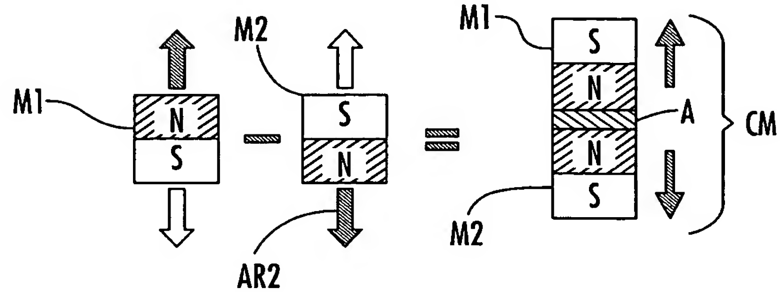


FIG. 4

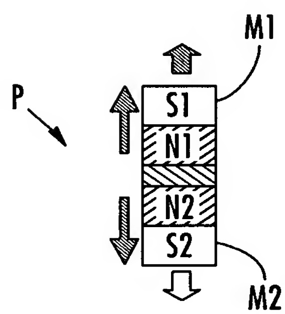


FIG. 5A

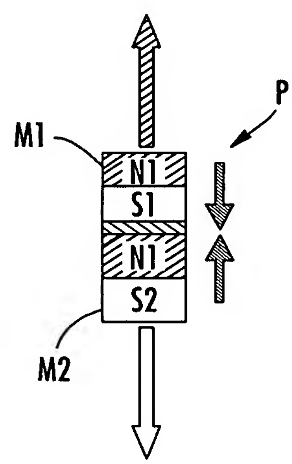


FIG. 5B

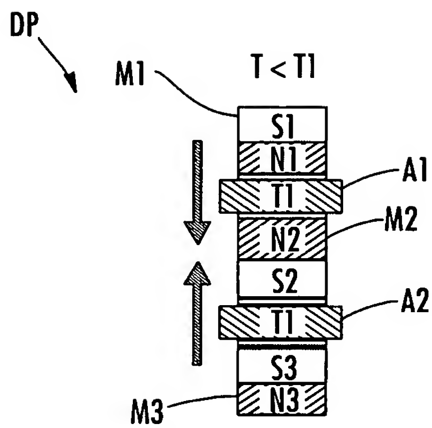

DP
M1
T < T1
S1
N1
T1
A1
N2
M2
S2
T1
A2
S3
M3
N3

FIG. 6A

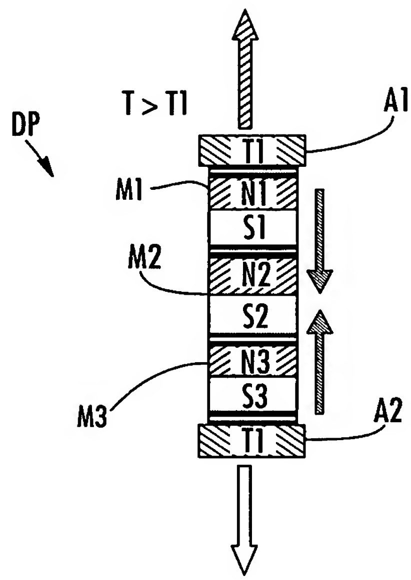

T > T1
A1
DP
T1
M1
N1
S1
M2
N2
S2
N3
M3
S3
A2
T1

FIG. 6B

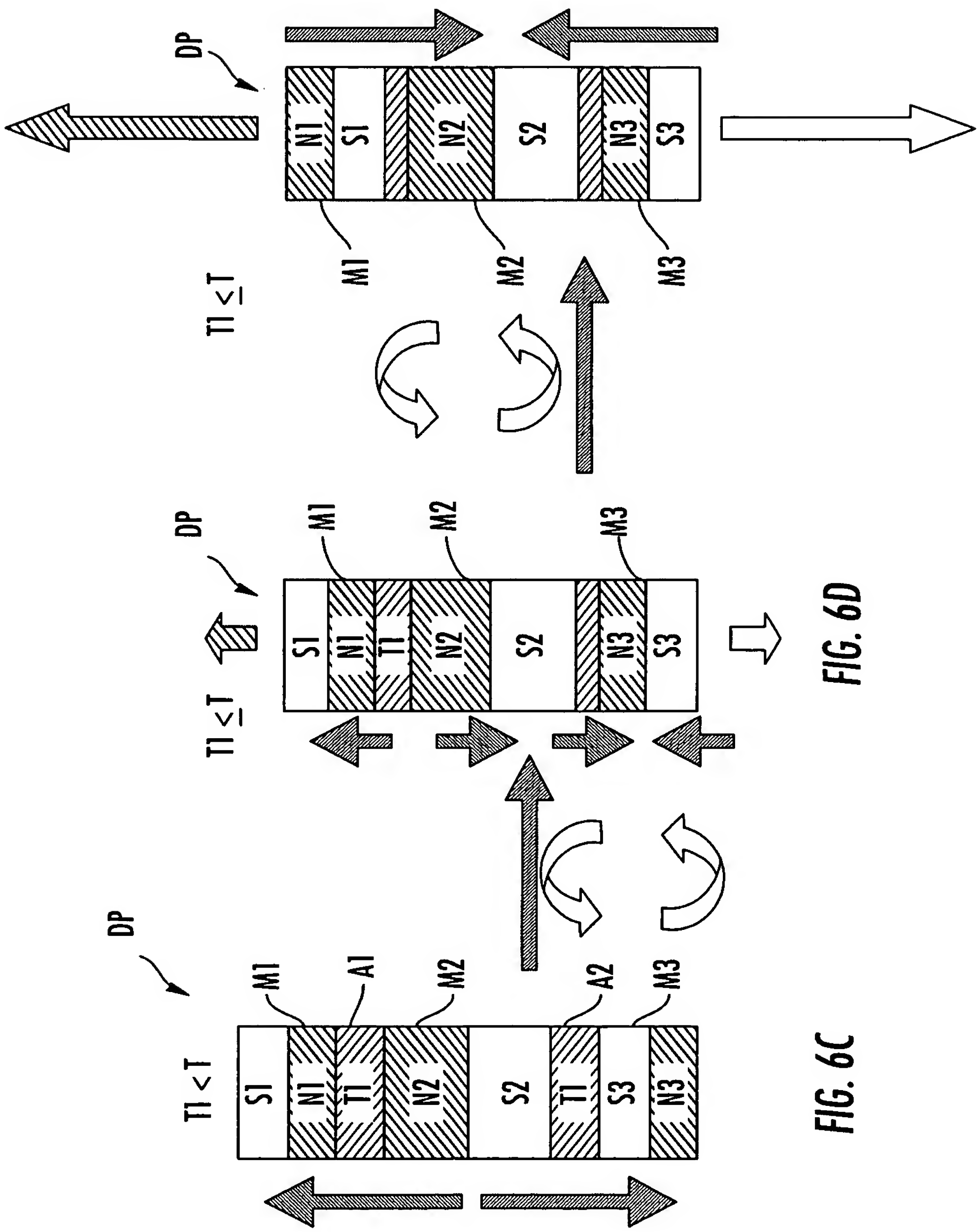


FIG. 6C

FIG. 6D

FIG. 6E

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices
for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

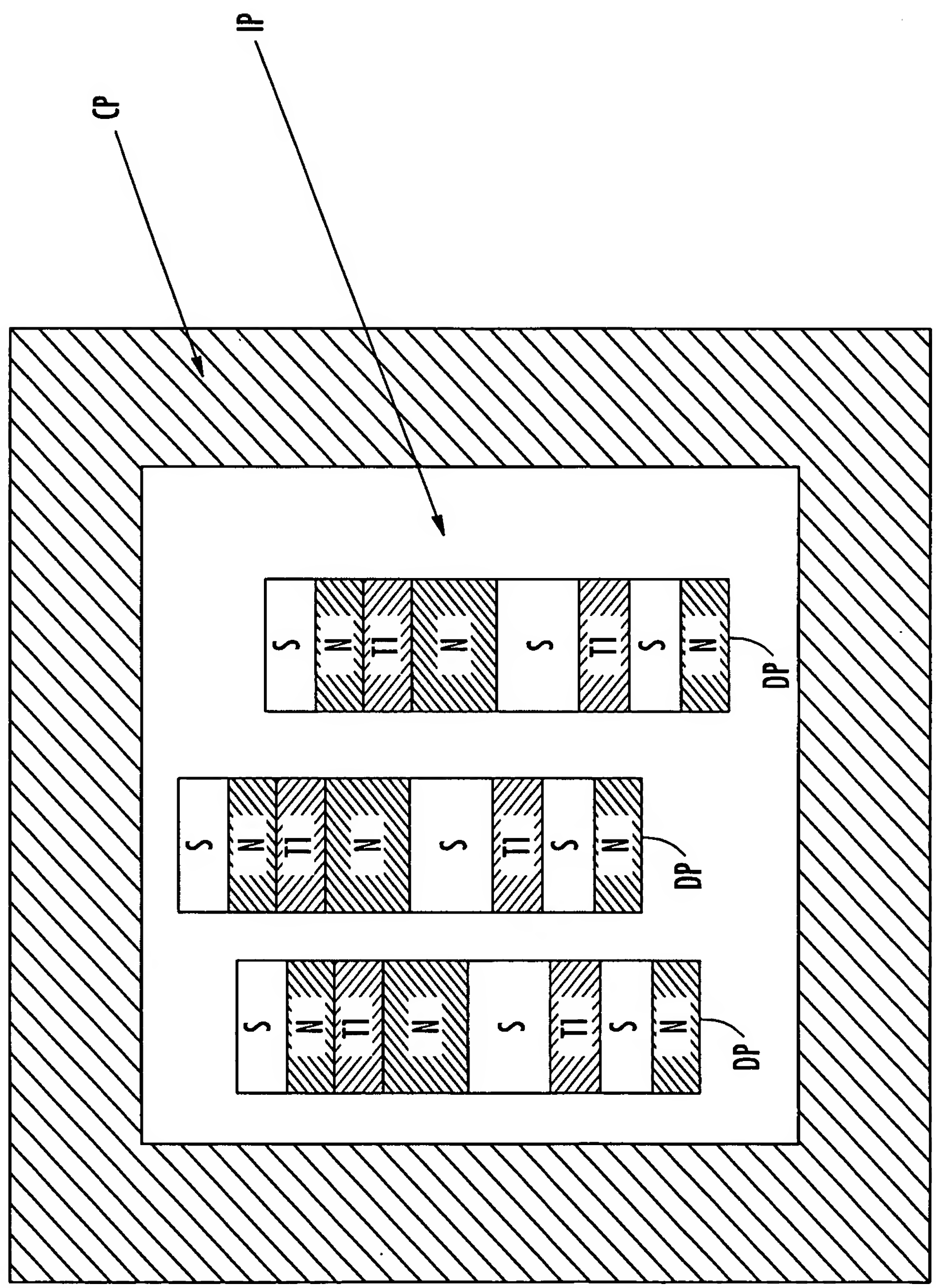


FIG. 6F

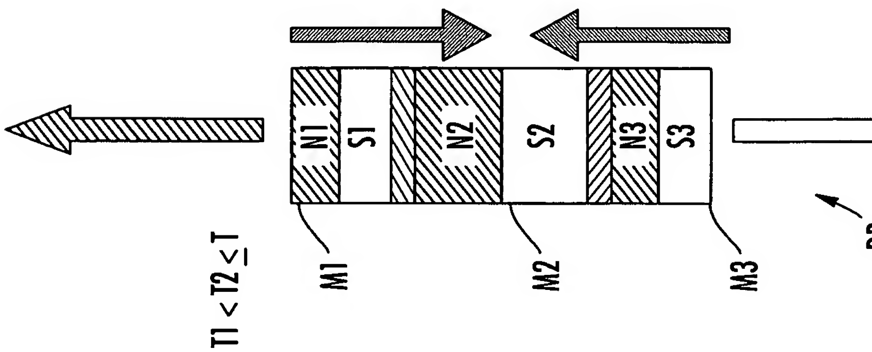


FIG. 7C

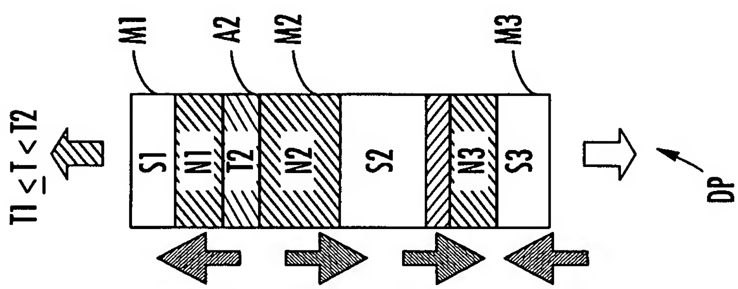


FIG. 7B

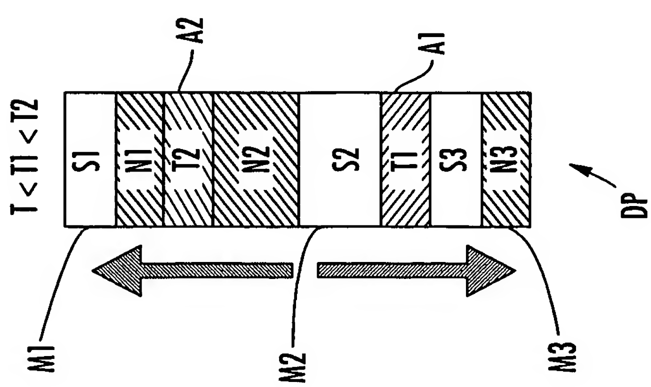


FIG. 7A

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices
for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

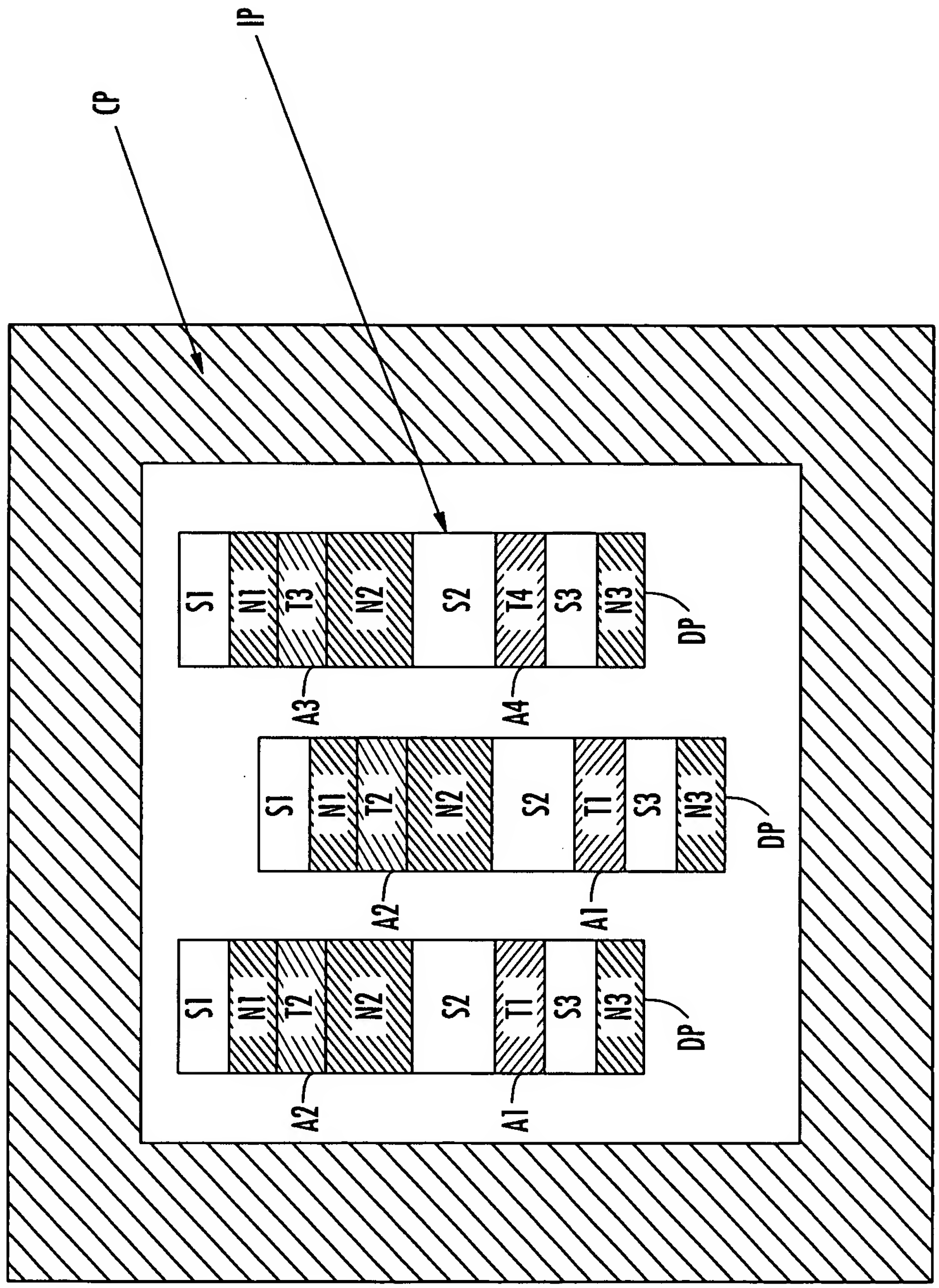


FIG. 7D

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

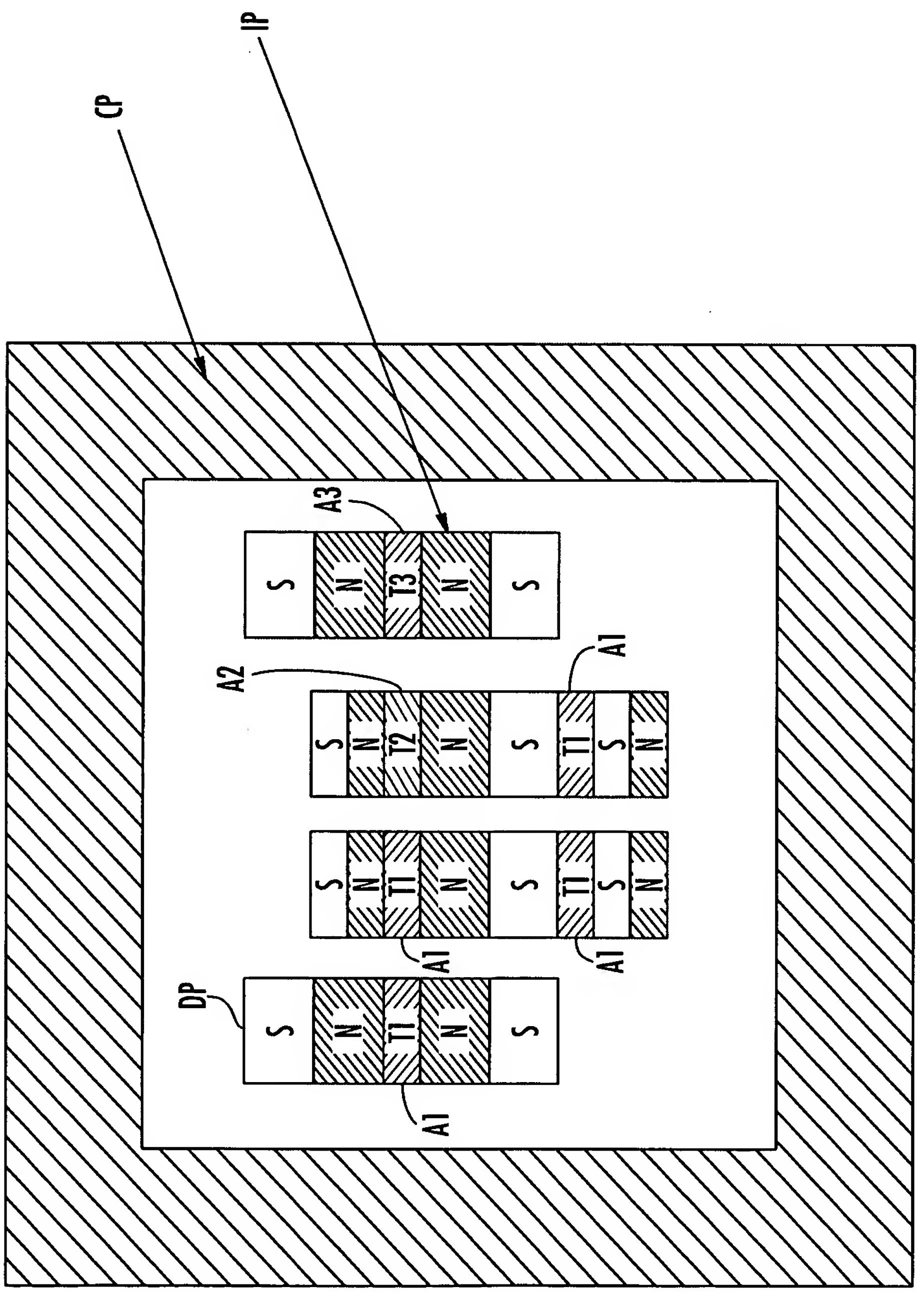


FIG. 7E

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices
for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

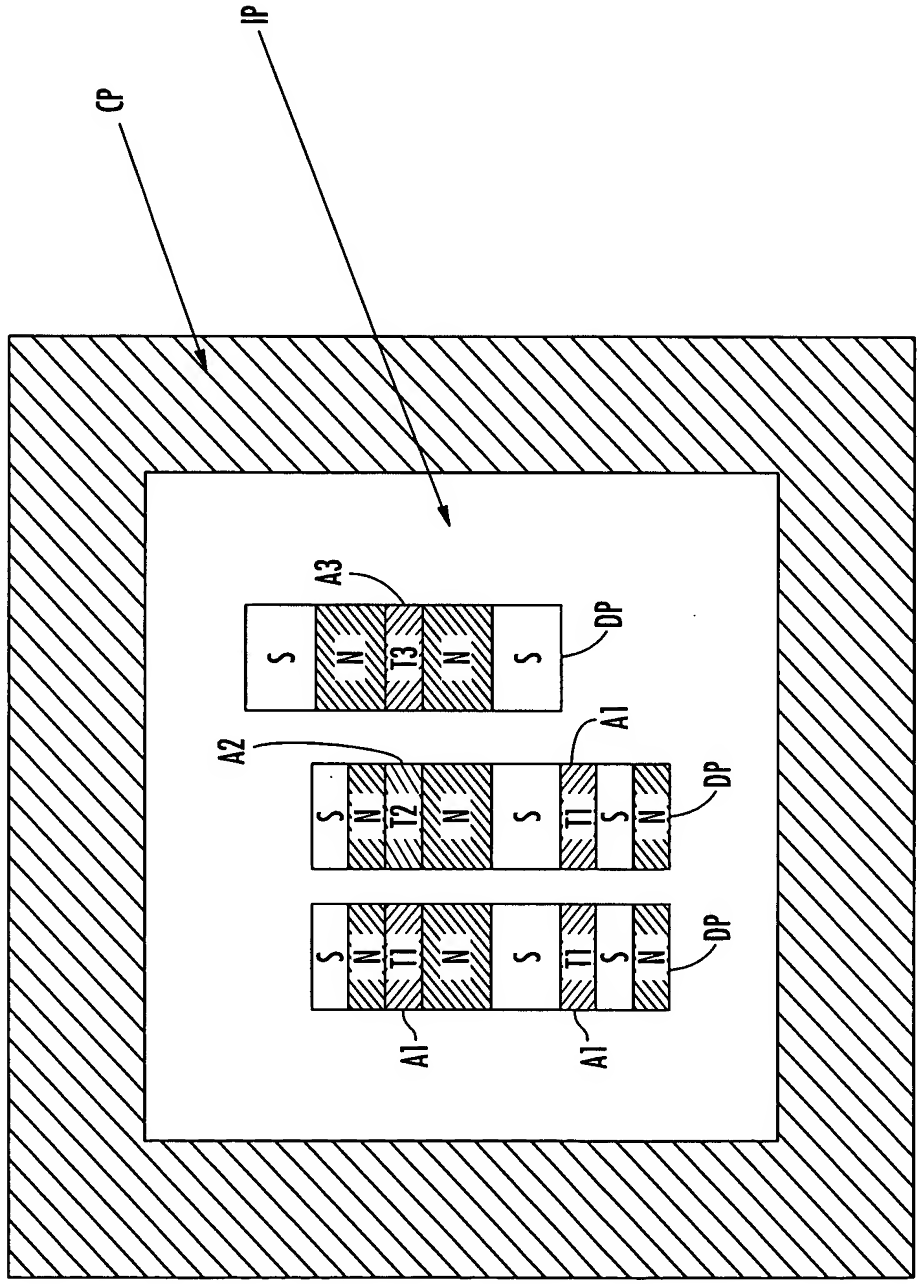


FIG. 7F

REPLACEMENT DRAWING

Title: Methods, Systems, and Devices
for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

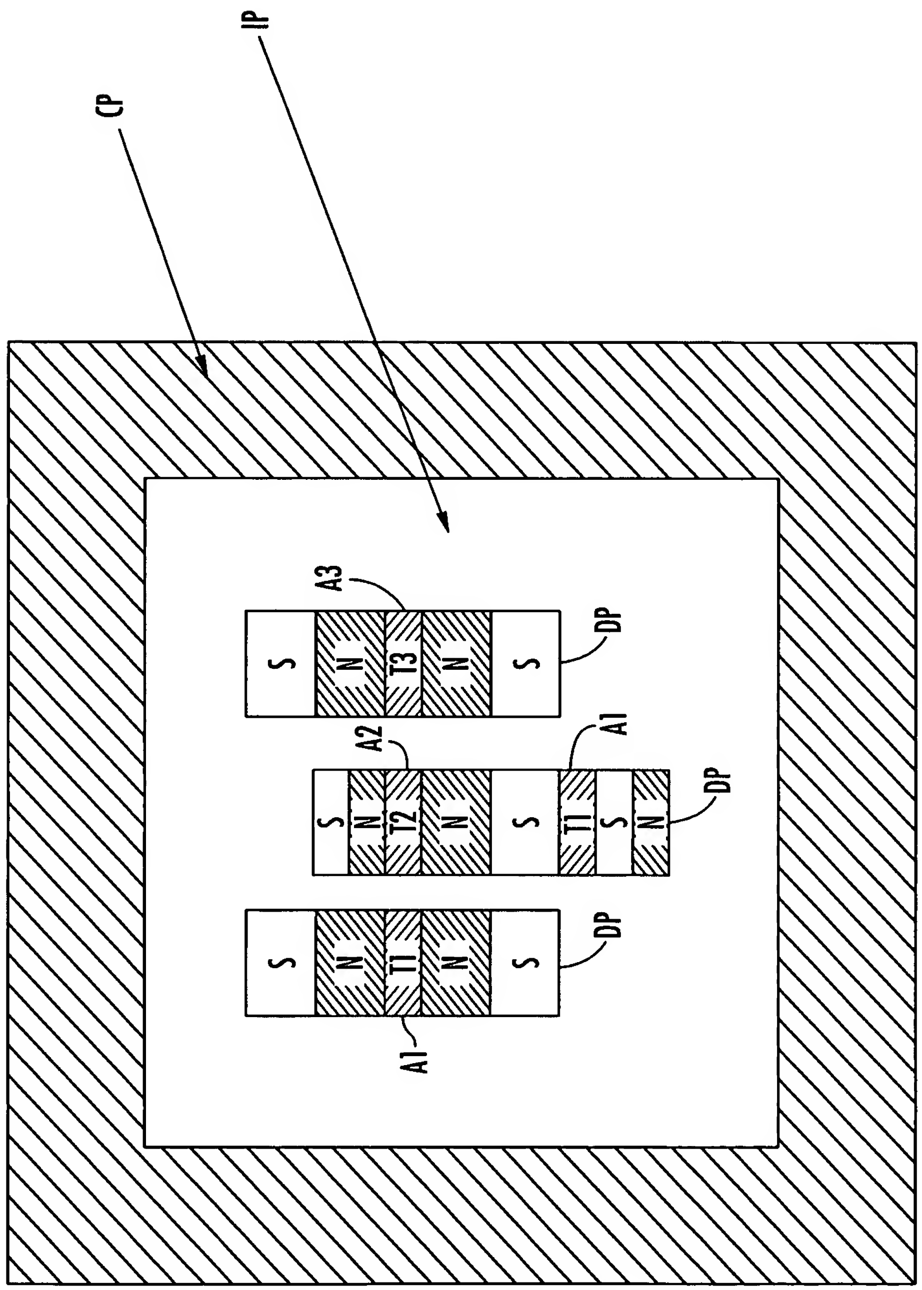


FIG. 7G

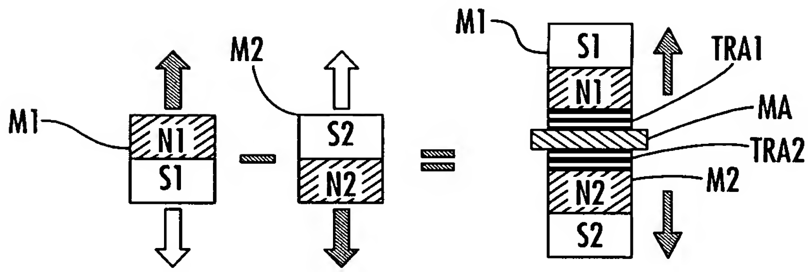


FIG. 8

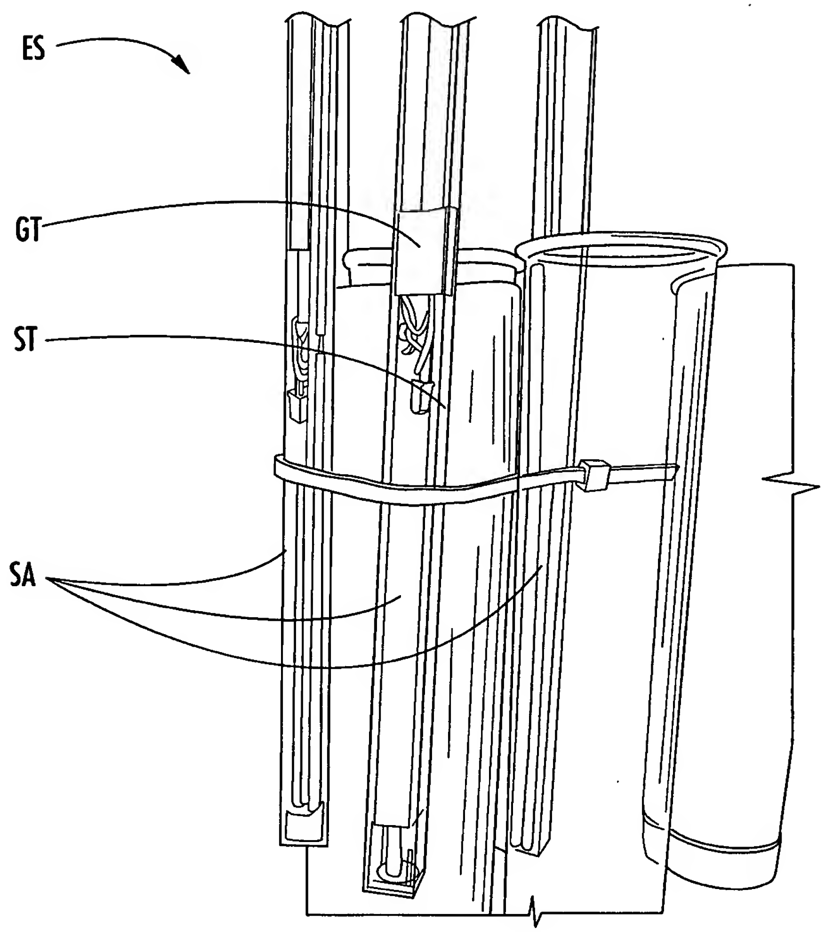


FIG. 9

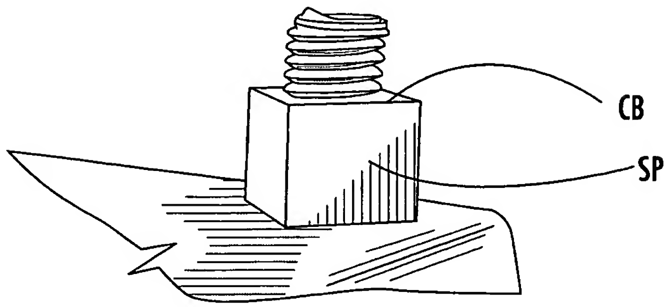


FIG. 10

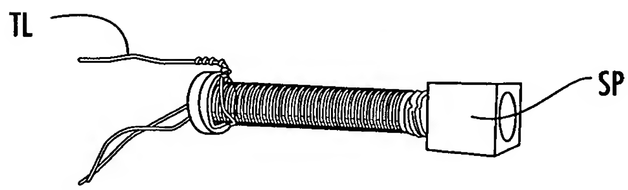


FIG. 11

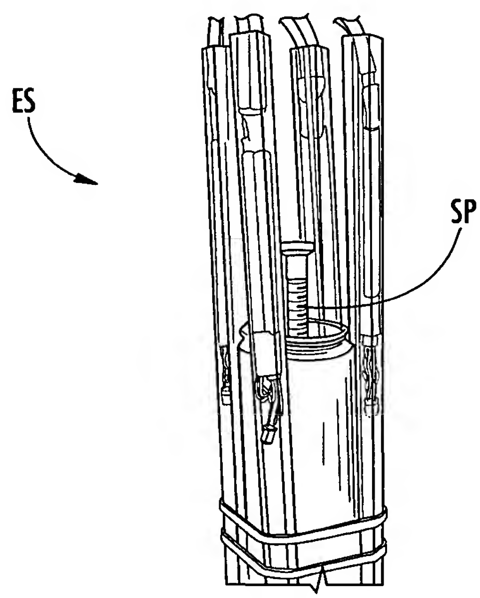


FIG. 12

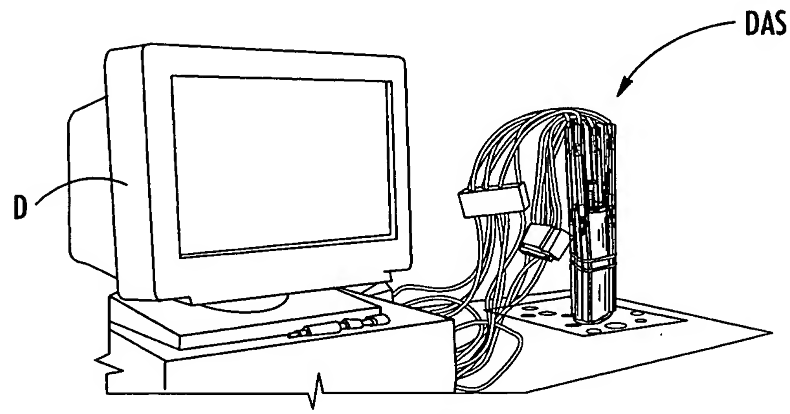


FIG. 13

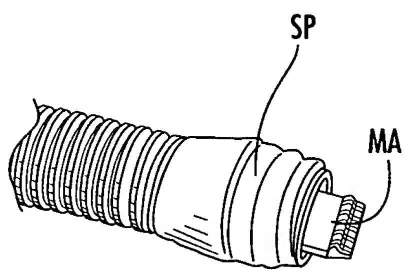


FIG. 14A

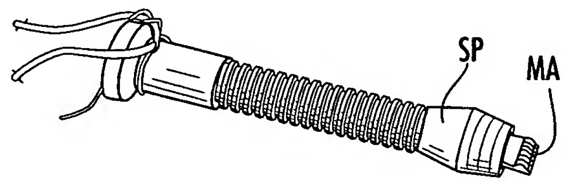


FIG. 14B

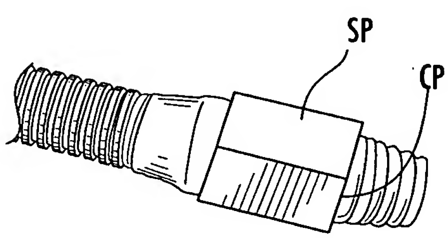


FIG. 14C

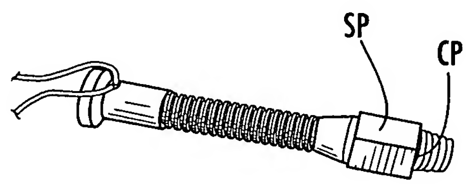


FIG. 14D

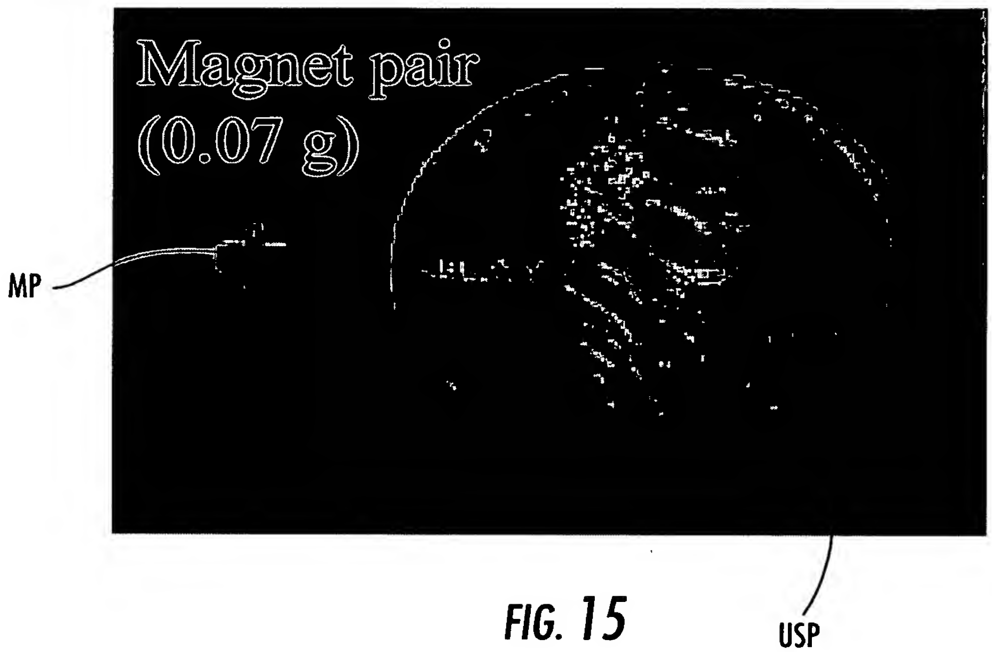


FIG. 15

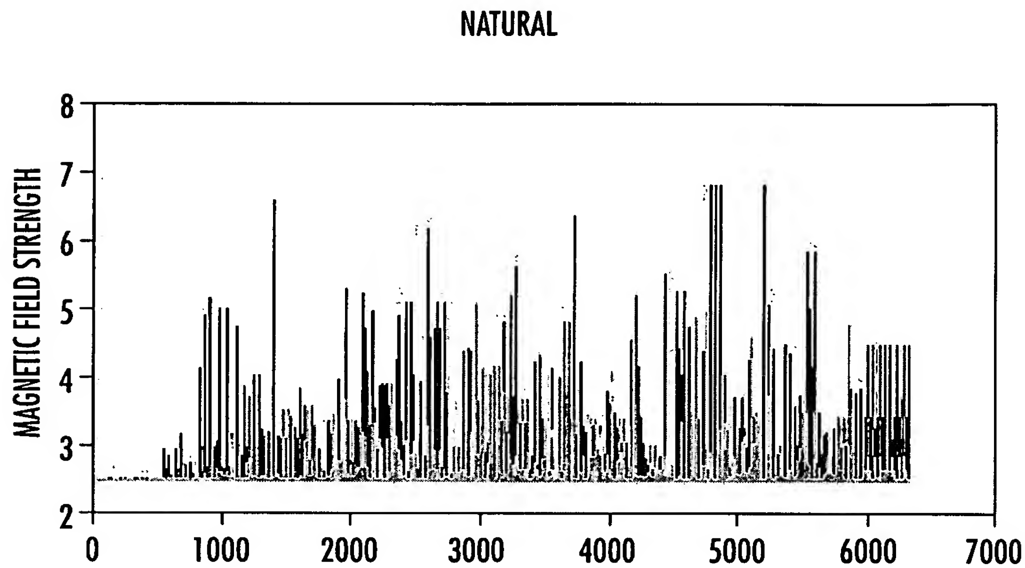

NATURAL
MAGNETIC FIELD STRENGTH
8
7
6
5
4
3
2
0
1000
2000
3000
4000
5000
6000
7000

FIG. 16

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices
for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

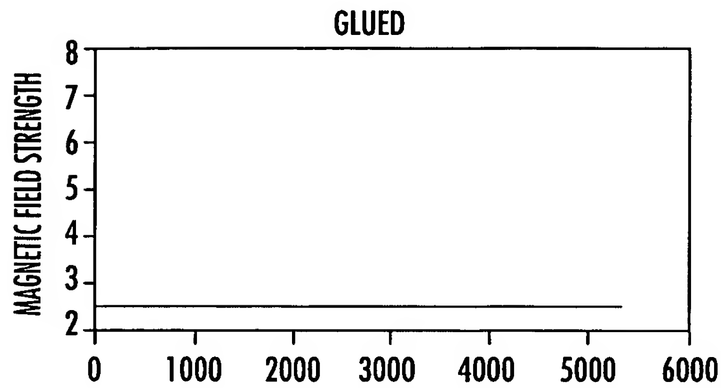


FIG. 17

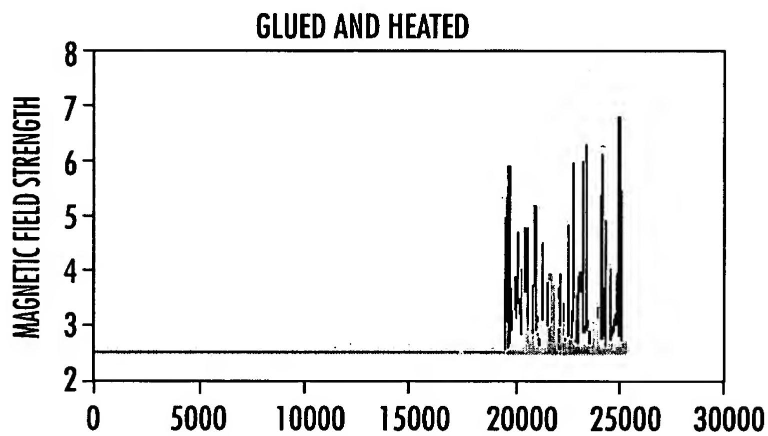


FIG. 18

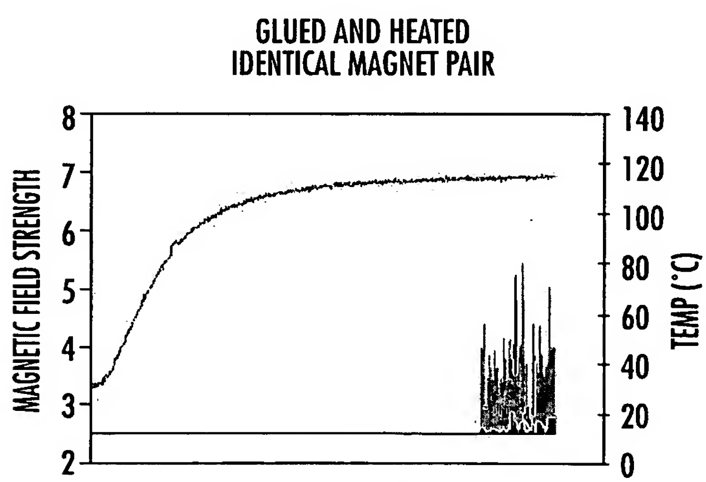


FIG. 19

GLUED AND HEATED
NON-IDENTICAL MAGNETIC PAIR

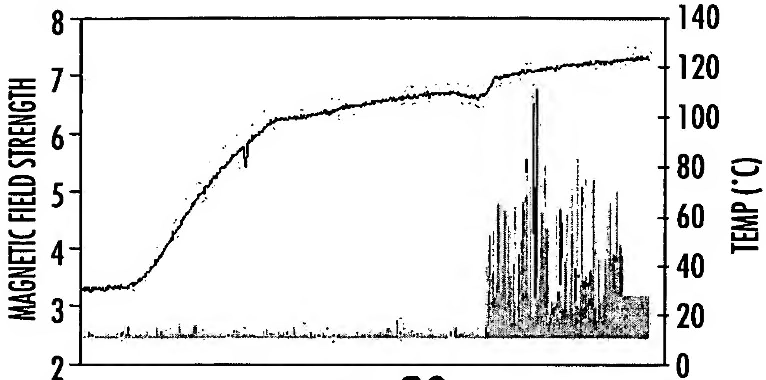


FIG. 20

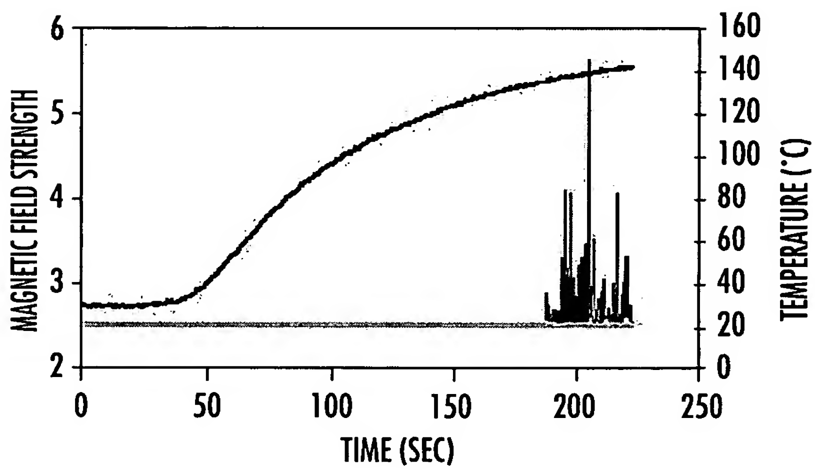


FIG. 21

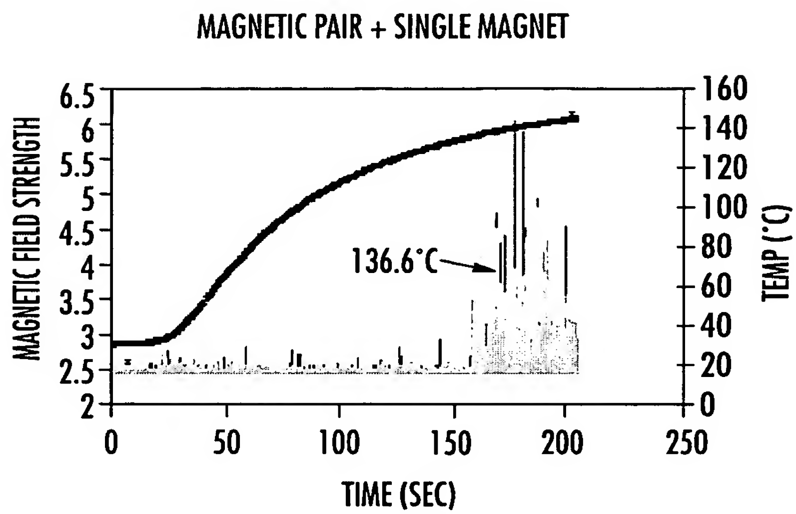

MAGNETIC PAIR + SINGLE MAGNET
MAGNETIC FIELD STRENGTH
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
160
140
120
100
80
60
40
20
0
TEMP (°C)
136.6°C
0
50
100
150
200
250
TIME (SEC)

FIG. 22

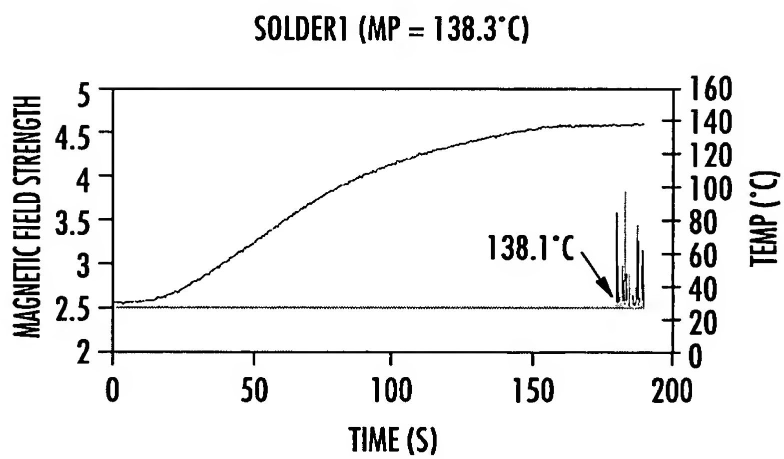

SOLDER1 (MP = 138.3°C)
MAGNETIC FIELD STRENGTH
5
4.5
4
3.5
3
2.5
2
160
140
120
100
80
60
40
20
0
TEMP (°C)
138.1°C
0
50
100
150
200
TIME (S)

FIG. 23

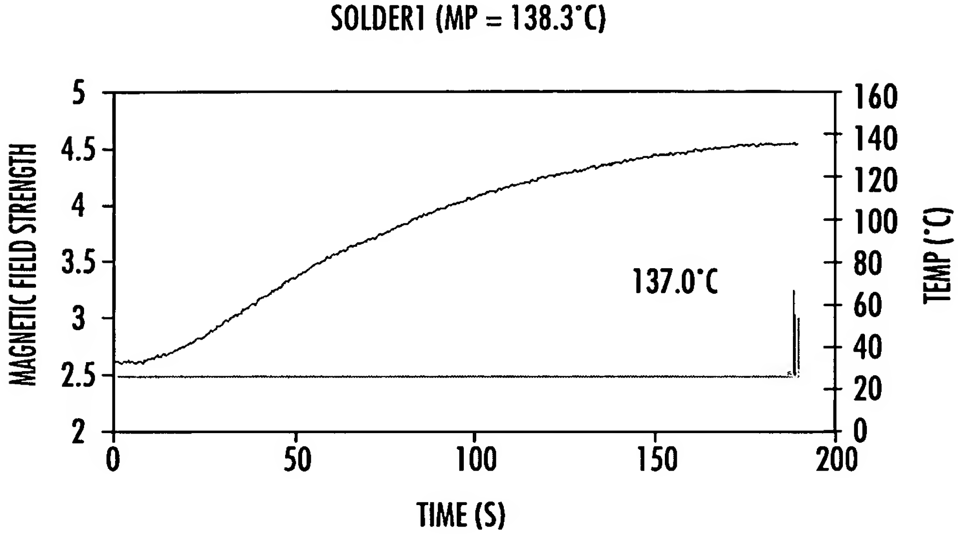

SOLDER1 (MP = 138.3°C)
MAGNETIC FIELD STRENGTH
TEMP (°C)
TIME (S)
137.0°C
5
4.5
4
3.5
3
2.5
2
160
140
120
100
80
60
40
20
0
0
50
100
150
200

FIG. 24

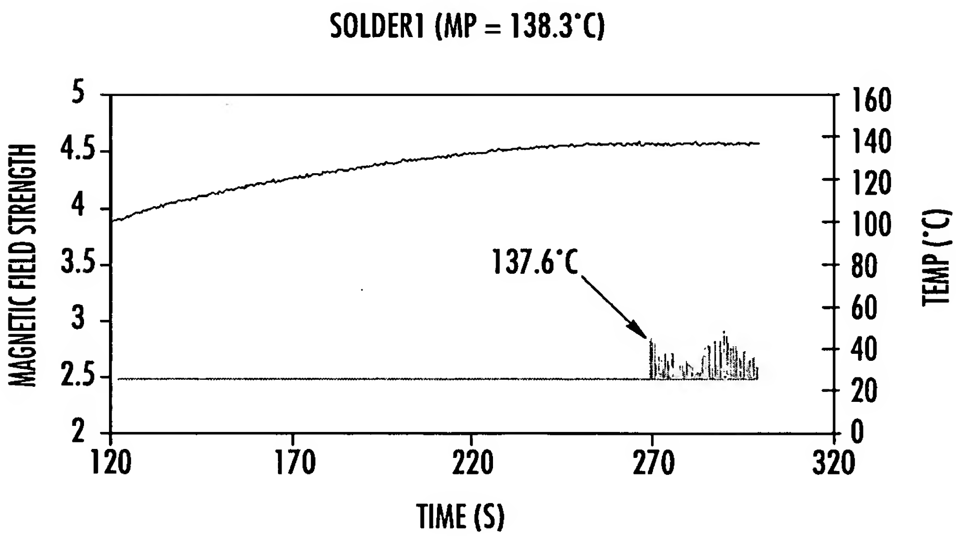

SOLDER1 (MP = 138.3°C)
MAGNETIC FIELD STRENGTH
TEMP (°C)
TIME (S)
137.6°C
5
4.5
4
3.5
3
2.5
2
160
140
120
100
80
60
40
20
0
120
170
220
270
320

FIG. 25

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

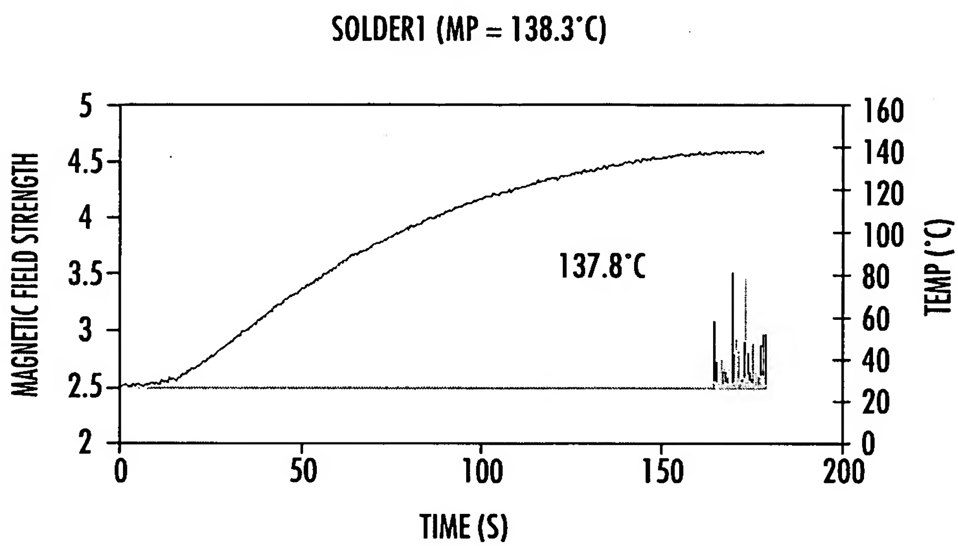


FIG. 26

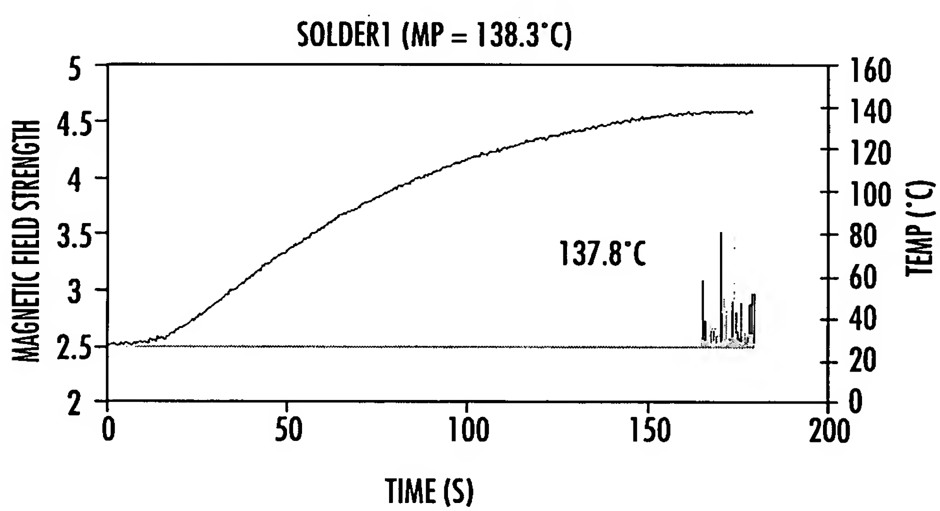


FIG. 27

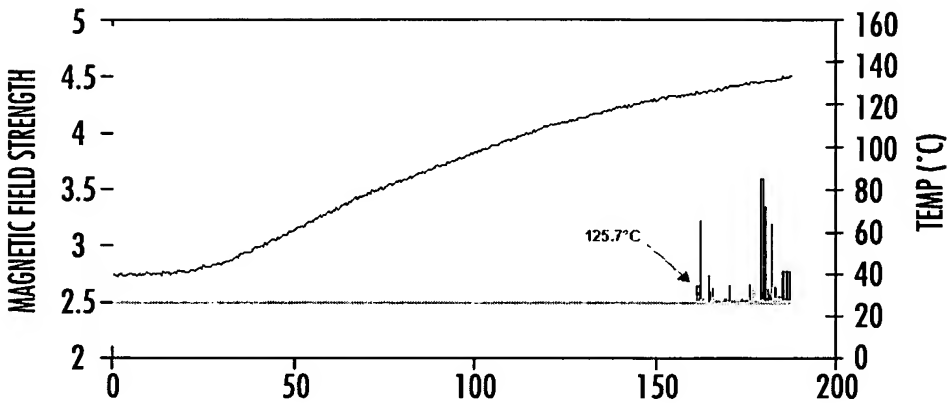

SOLDER2 (MP = 123.9°C)
MAGNETIC FIELD STRENGTH
TEMP (°C)
TIME (S)
125.7°C
5
4.5
4
3.5
3
2.5
2
160
140
120
100
80
60
40
20
0
0
50
100
150
200

FIG. 28

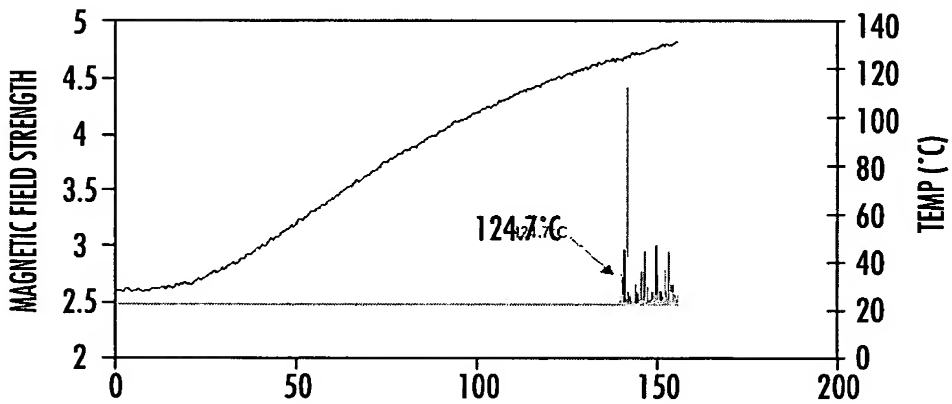

SOLDER2 (MP = 123.9°C)
MAGNETIC FIELD STRENGTH
TEMP (°C)
TIME (S)
124.7°C
5
4.5
4
3.5
3
2.5
2
140
120
100
80
60
40
20
0
0
50
100
150
200

FIG. 29

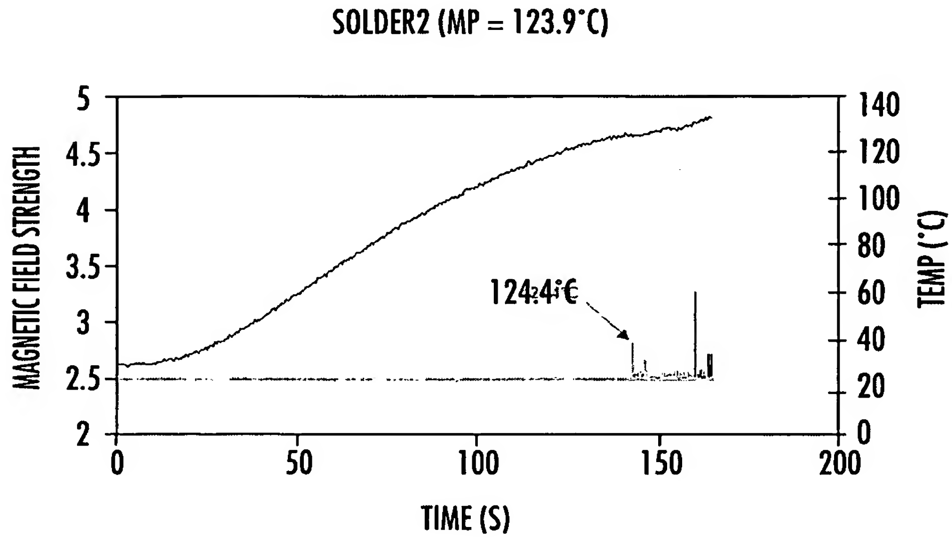

SOLDER2 (MP = 123.9°C)
5
4.5
4
3.5
3
2.5
2
MAGNETIC FIELD STRENGTH
140
120
100
80
60
40
20
0
TEMP (°C)
0
50
100
150
200
TIME (S)

FIG. 30

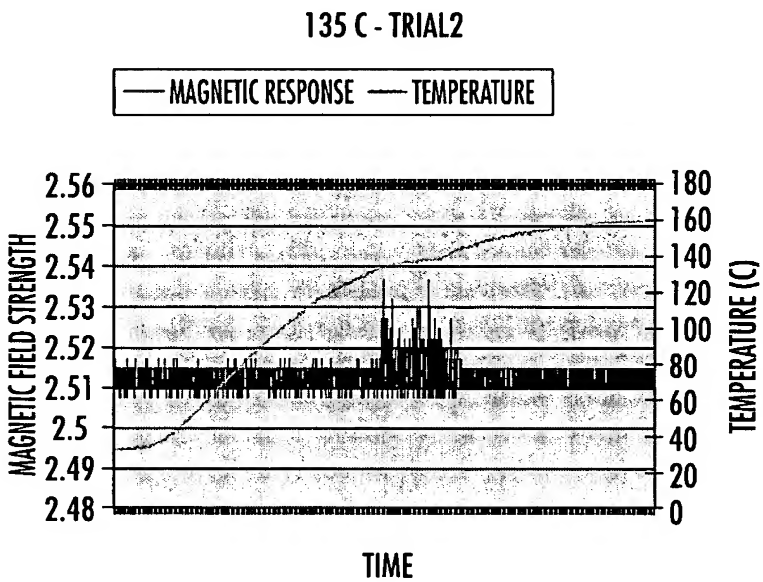

135 C - TRIAL2
MAGNETIC RESPONSE
TEMPERATURE
2.56
2.55
2.54
2.53
2.52
2.51
2.5
2.49
2.48
MAGNETIC FIELD STRENGTH
180
160
140
120
100
80
60
40
20
0
TEMPERATURE (C)
TIME

FIG. 31

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

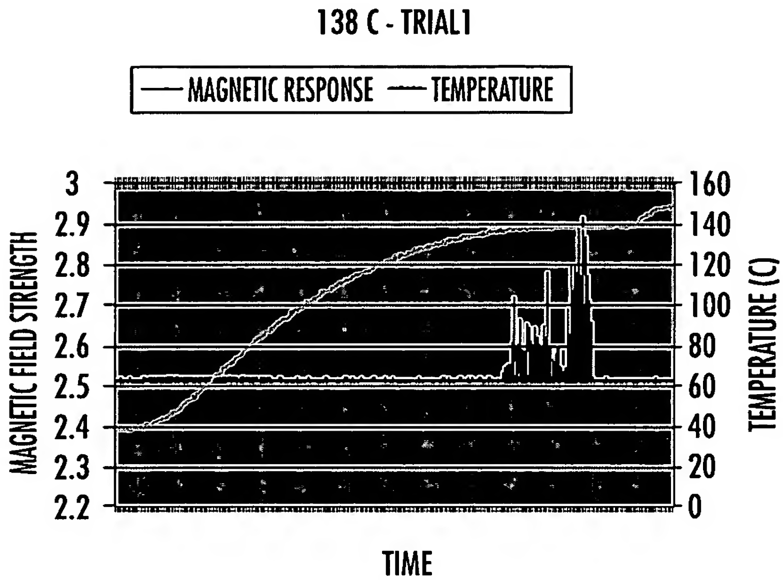


FIG. 32

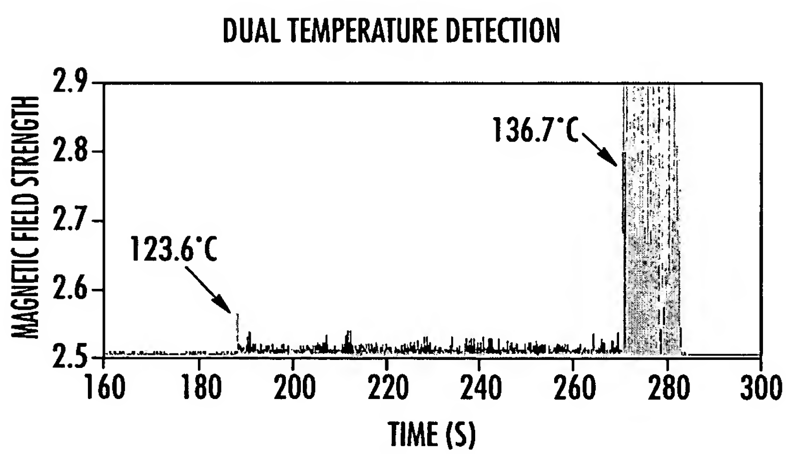


FIG. 33

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices
for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

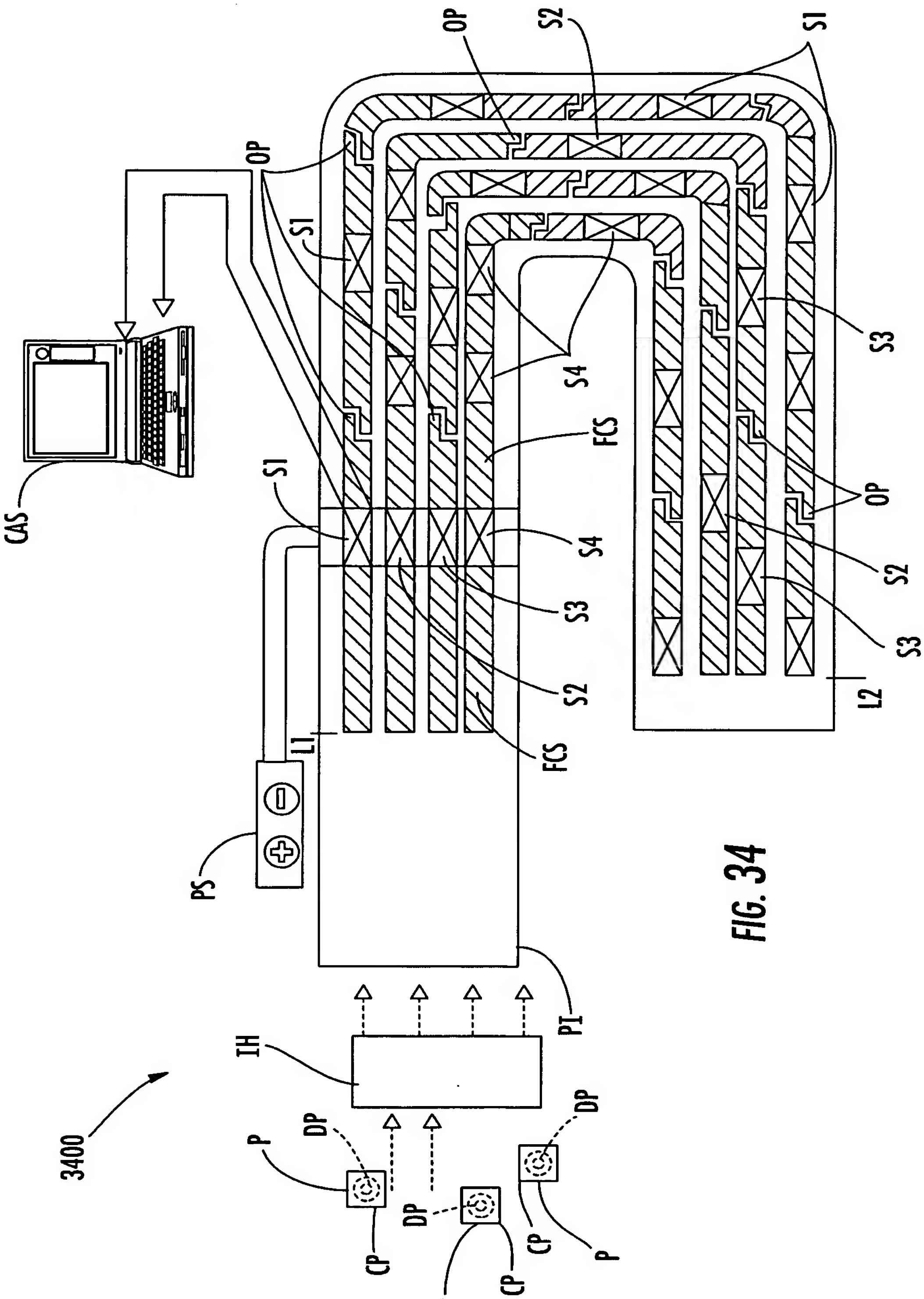


FIG. 34

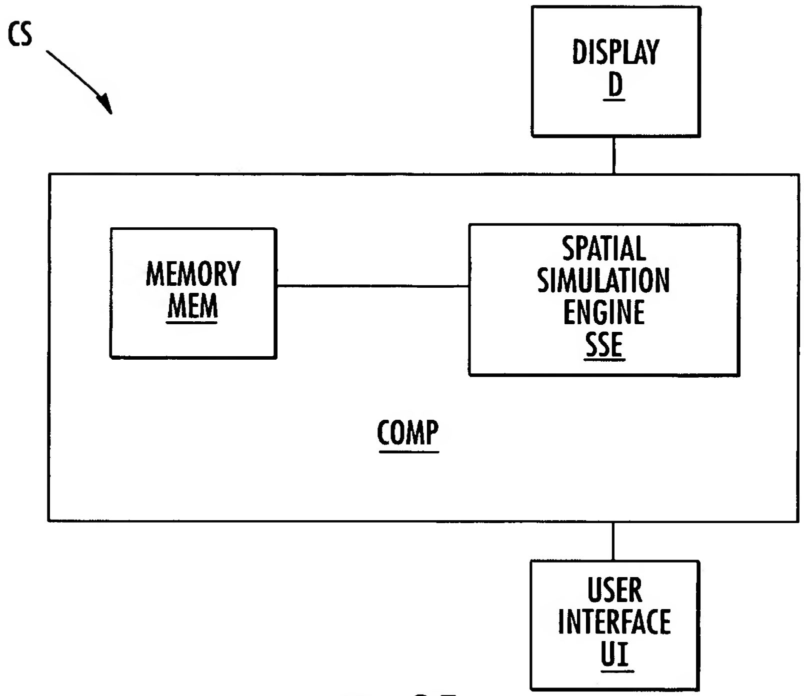

CS
DISPLAY
D
MEMORY
MEM
SPATIAL
SIMULATION
ENGINE
SSE
COMP
USER
INTERFACE
UI

FIG. 35

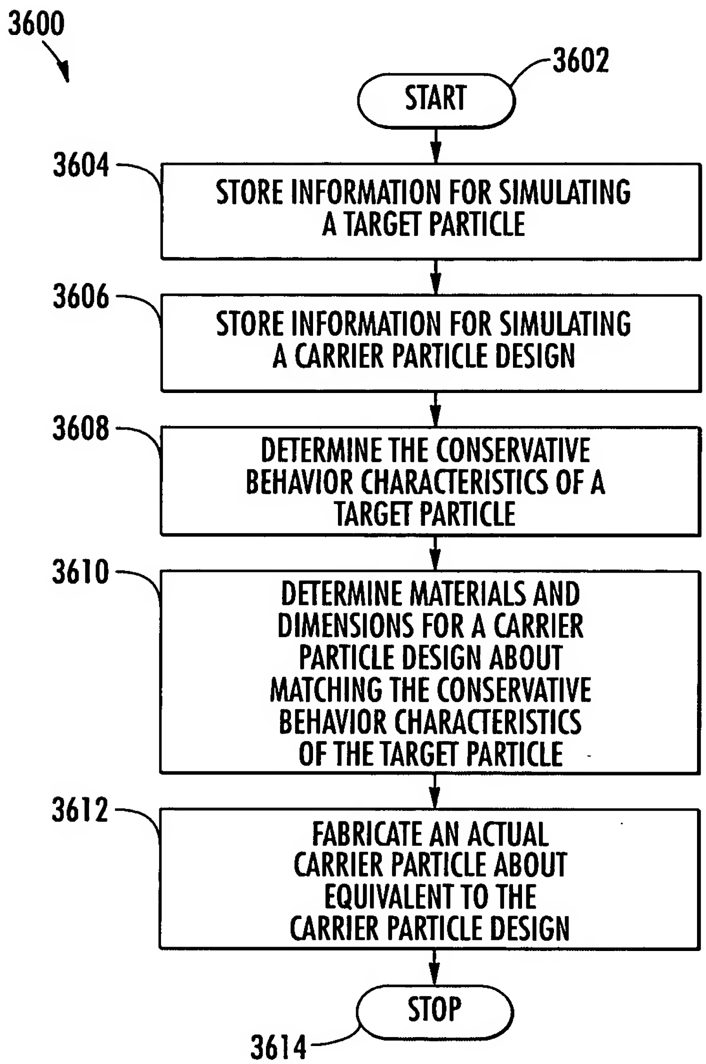

3600
START
3602
3604
STORE INFORMATION FOR SIMULATING A TARGET PARTICLE
3606
STORE INFORMATION FOR SIMULATING A CARRIER PARTICLE DESIGN
3608
DETERMINE THE CONSERVATIVE BEHAVIOR CHARACTERISTICS OF A TARGET PARTICLE
3610
DETERMINE MATERIALS AND DIMENSIONS FOR A CARRIER PARTICLE DESIGN ABOUT MATCHING THE CONSERVATIVE BEHAVIOR CHARACTERISTICS OF THE TARGET PARTICLE
3612
FABRICATE AN ACTUAL CARRIER PARTICLE ABOUT EQUIVALENT TO THE CARRIER PARTICLE DESIGN
STOP
3614

FIG. 36

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

FIG. 37

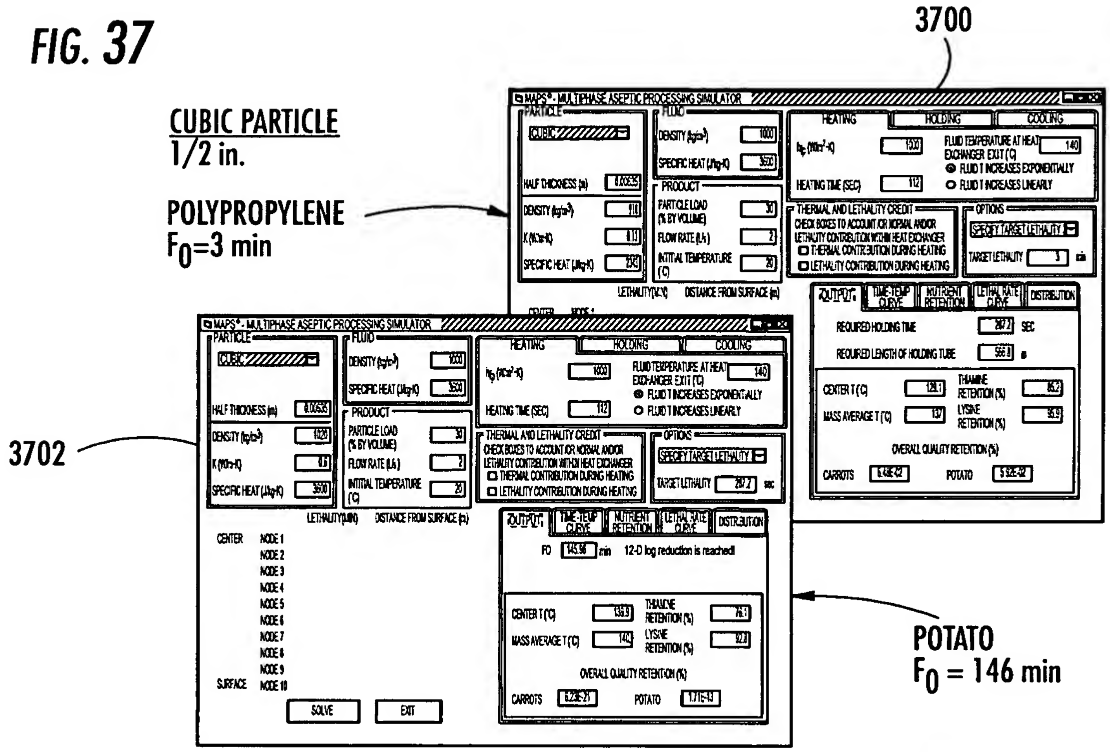


FIG. 38

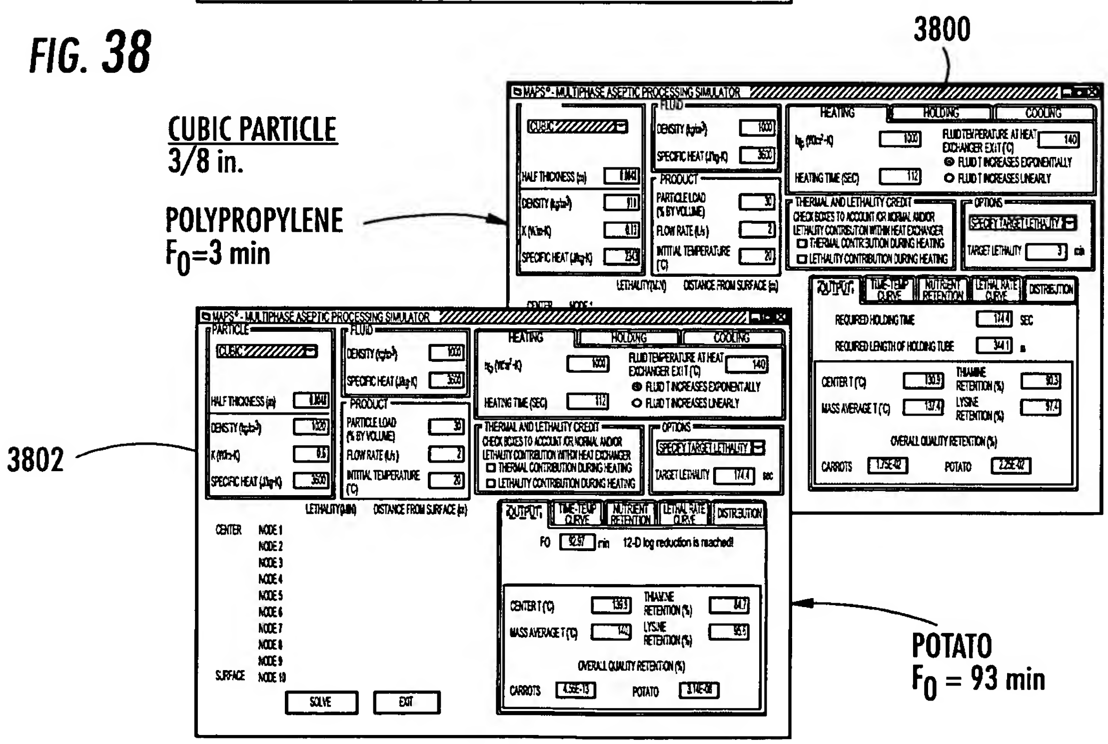


FIG. 39

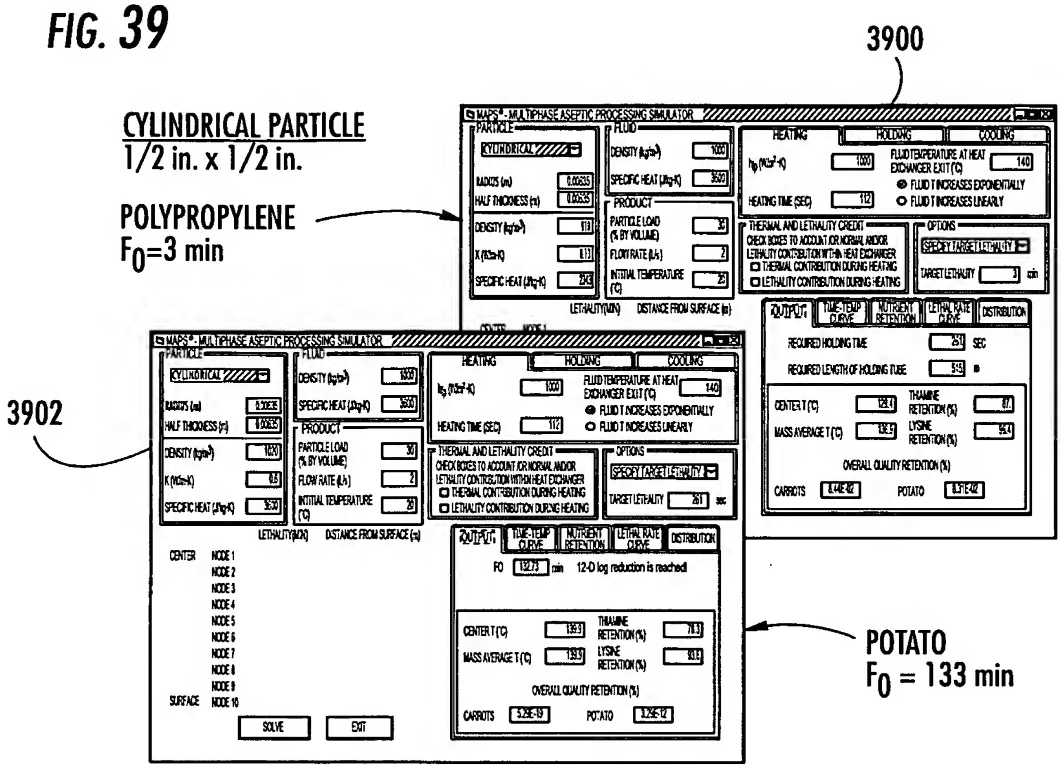
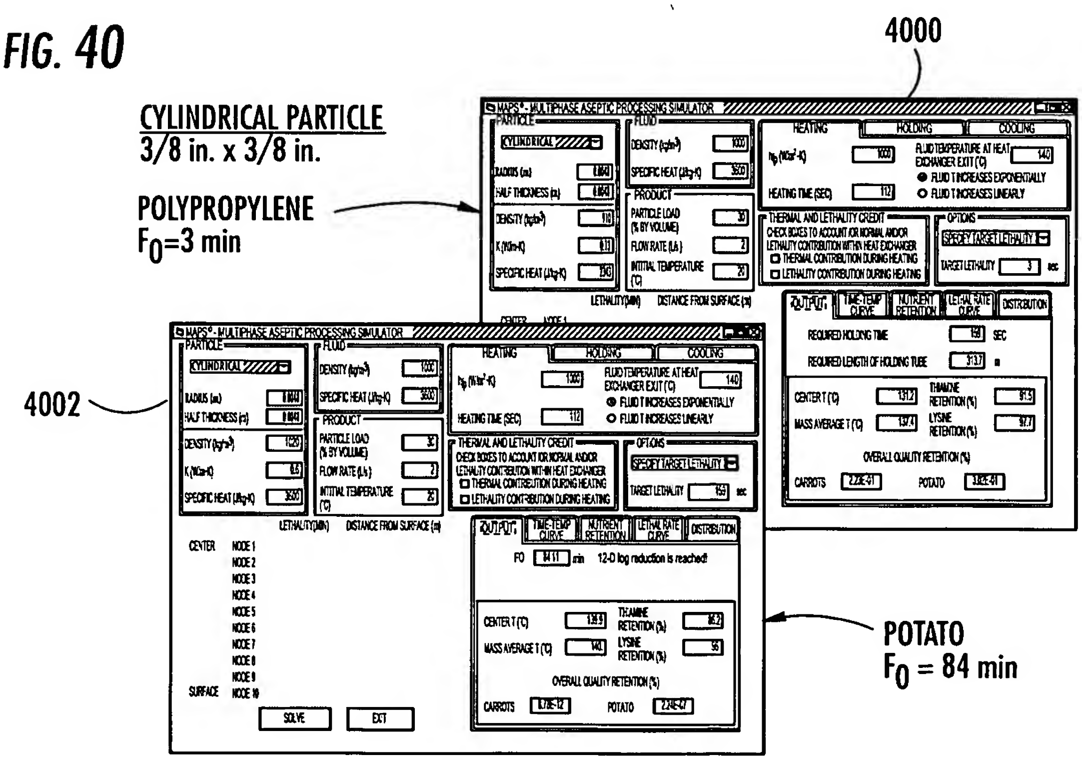

3900
CYLINDRICAL PARTICLE
1/2 in. x 1/2 in.
POLYPROPYLENE
F0=3 min
3902
POTATO
F0 = 133 min
MAPS - MULTIPHASE ASEPTIC PROCESSING SIMULATOR
SOLVE
EXIT

FIG. 40


4000
CYLINDRICAL PARTICLE
3/8 in. x 3/8 in.
POLYPROPYLENE
F0=3 min
4002
POTATO
F0 = 84 min
MAPS - MULTIPHASE ASEPTIC PROCESSING SIMULATOR
SOLVE
EXIT

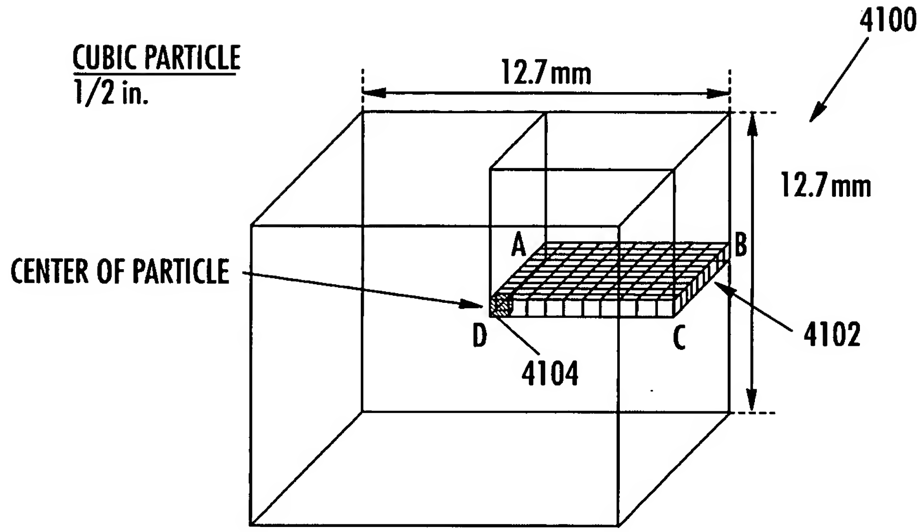
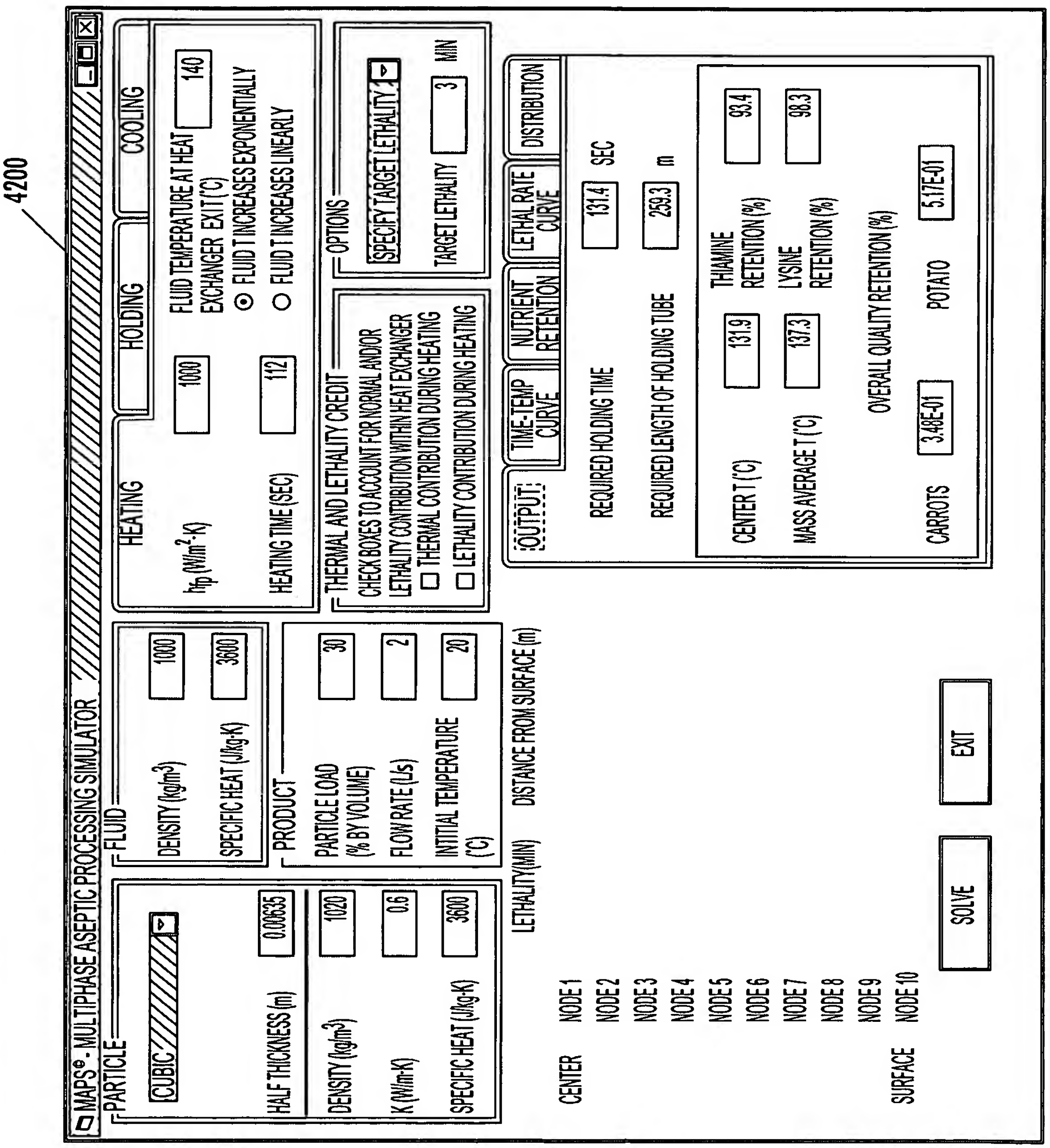

CUBIC PARTICLE
1/2 in.
12.7mm
12.7mm
4100
CENTER OF PARTICLE
A
B
C
D
4102
4104

FIG. 41



POTATO
1/2 IN.
Fo(CENTER) = 3 MIN.
TIME = 131.4 s
(HOLDING ONLY)
$\alpha = 1.63 \times 10^{-7} m2/s$

FIG. 42

POTATO
1/2 IN.

A — 6.35 mm — B

37.2	38.0	39.4	41.7	45.1	49.7	56.0	64.8	77.5	97.2
21.3	21.9	23.0	24.9	27.7	31.6	37.1	45.1	57.3	77.5
13.6	14.0	14.9	16.4	18.7	22.0	26.7	33.9	45.1	64.8
9.3	9.6	10.4	11.6	13.5	16.2	20.4	26.7	37.1	56.0
6.7	7.0	7.6	8.6	10.2	12.6	16.2	22.0	31.6	49.7
5.1	5.4	5.9	6.8	8.1	10.2	13.5	18.7	27.7	45.1
4.1	4.4	4.8	5.6	6.8	8.6	11.6	16.4	24.9	41.7
3.5	3.7	4.1	4.8	5.9	7.6	10.4	14.9	23.0	39.4
3.2	3.3	3.7	4.4	5.4	7.0	9.6	14.0	21.9	38.0
3.0	3.2	3.5	4.1	5.1	6.7	9.3	13.6	21.3	37.2

6.35 mm

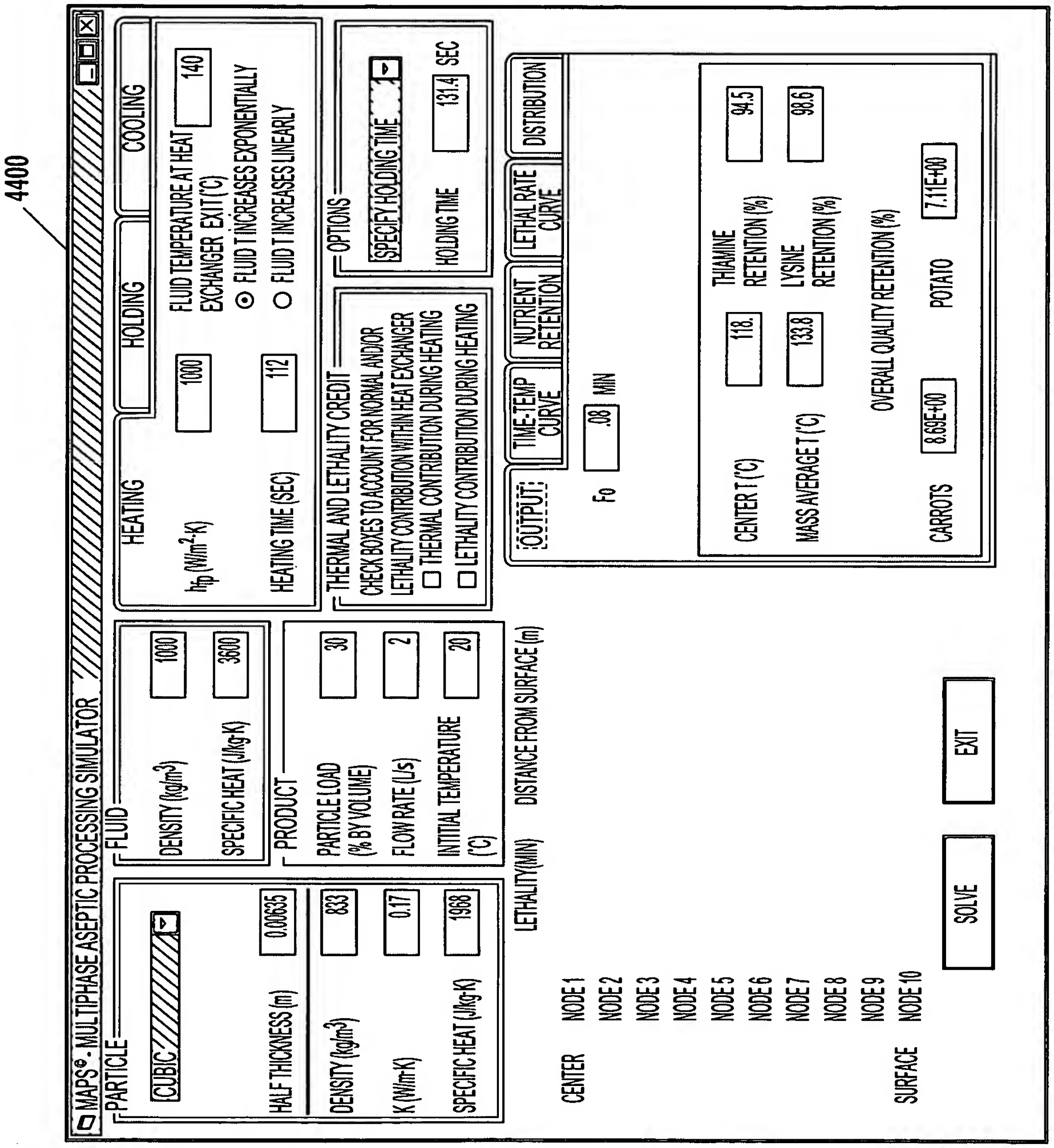
D — C

4300

4102

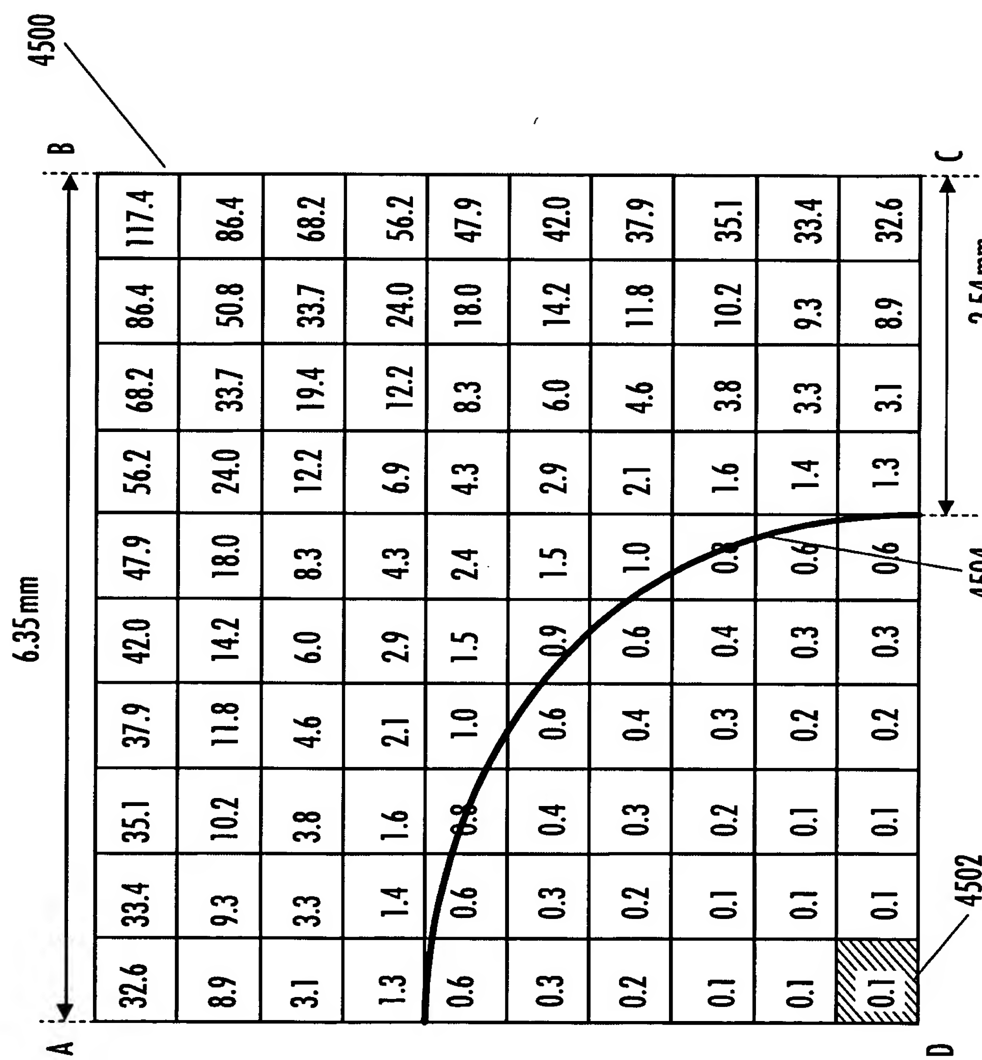
4104

FIG. 43



TPX
1/2 IN.
TIME = 131.4 s
(HOLDING ONLY)
$\alpha = 1.04 \times 10^{-7}\ m^2/s$

FIG. 44



32.6	33.4	35.1	37.9	42.0	47.9	56.2	68.2	86.4	117.4
8.9	9.3	10.2	11.8	14.2	18.0	24.0	33.7	50.8	86.4
3.1	3.3	3.8	4.6	6.0	8.3	12.2	19.4	33.7	68.2
1.3	1.4	1.6	2.1	2.9	4.3	6.9	12.2	24.0	56.2
0.6	0.6	0.8	1.0	1.5	2.4	4.3	8.3	18.0	47.9
0.3	0.3	0.4	0.6	0.9	1.5	2.9	6.0	14.2	42.0
0.2	0.2	0.3	0.4	0.6	1.0	2.1	4.6	11.8	37.9
0.1	0.1	0.2	0.3	0.4	0.8	1.6	3.8	10.2	35.1
0.1	0.1	0.1	0.2	0.3	0.6	1.4	3.3	9.3	33.4
0.1	0.1	0.1	0.2	0.3	0.6	1.3	3.1	8.9	32.6

TPX
1/2 IN.

FIG. 45

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

4600

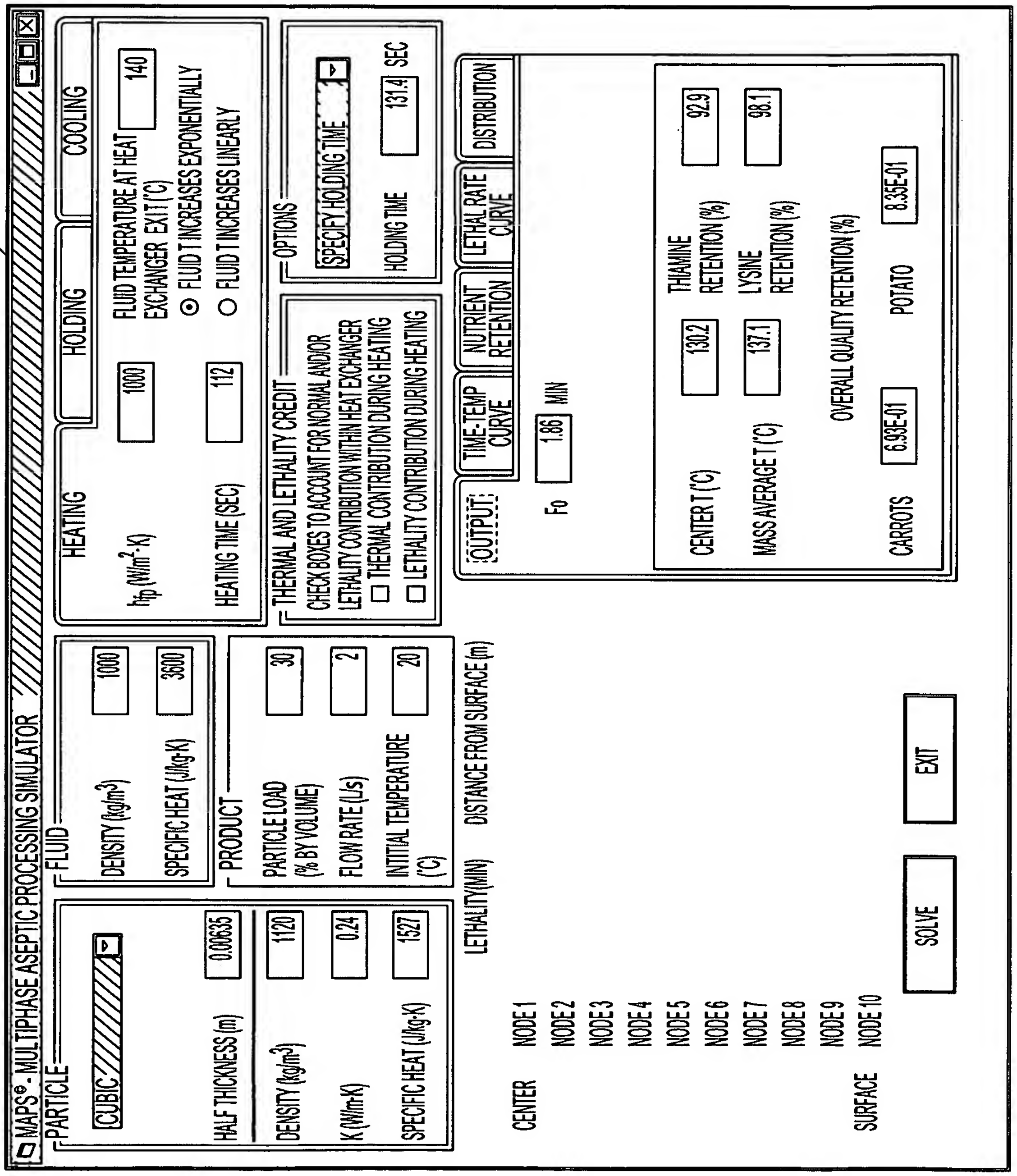


FIG. 46

NYLON
1/2 IN.
TIME = 131.4 s
(HOLDING ONLY)
$\alpha = 1.40 \times 10^{-7}\ m^2/s$

NYLON
1/2 IN.

6.35mm

A B 4700

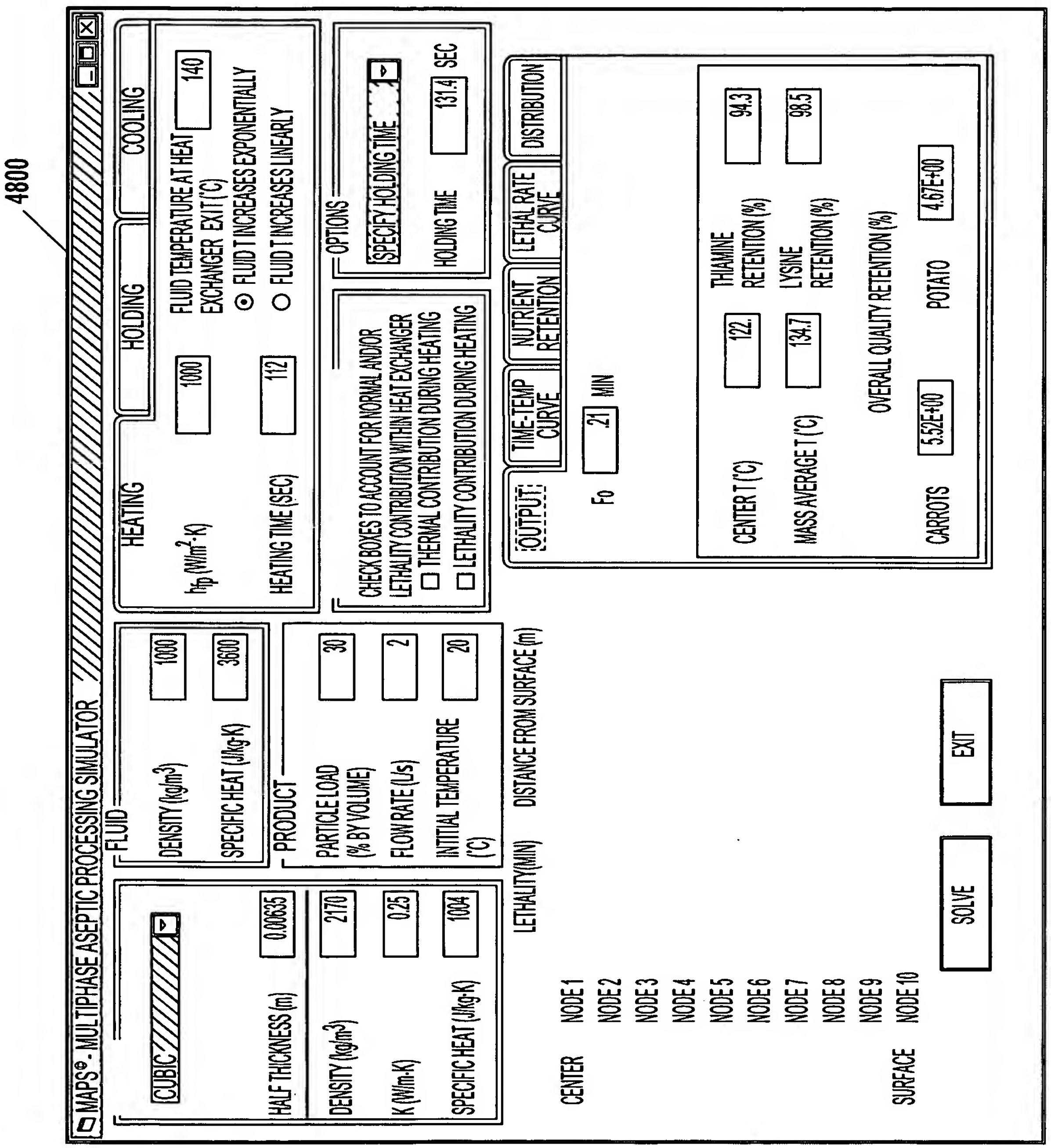
48.6	49.5	51.3	54.1	58.1	63.7	71.4	82.1	97.7	122.7
22.8	23.5	24.9	27.1	30.4	35.1	42.0	52.2	68.3	97.7
12.8	13.2	14.2	15.9	18.5	22.3	28.1	37.0	52.2	82.1
7.8	8.2	9.0	10.3	12.3	15.4	20.2	28.1	42.0	71.4
5.2	5.5	6.1	7.1	8.7	11.3	15.4	22.3	35.1	63.7
3.7	3.9	4.4	5.2	6.5	8.7	12.3	18.5	30.4	58.1
2.8	3.0	3.4	4.1	5.2	7.1	10.3	15.9	27.1	54.1
2.3	2.4	2.8	3.4	4.4	6.1	9.0	14.2	24.9	51.3
2.0	2.1	2.4	3.0	3.9	5.5	8.2	13.2	23.5	49.5
1.9	2.0	2.3	2.8	3.7	5.2	7.8	12.8	22.8	48.6

D 4702 4704 C

4.45mm

FIG. 47

REPLACEMENT DRAWING.
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2



TEFLON
1/2 IN.
TIME = 131.4 s
(HOLDING ONLY)
$\alpha = 1.15 \times 10^{-7} m^2/s$

FIG. 48

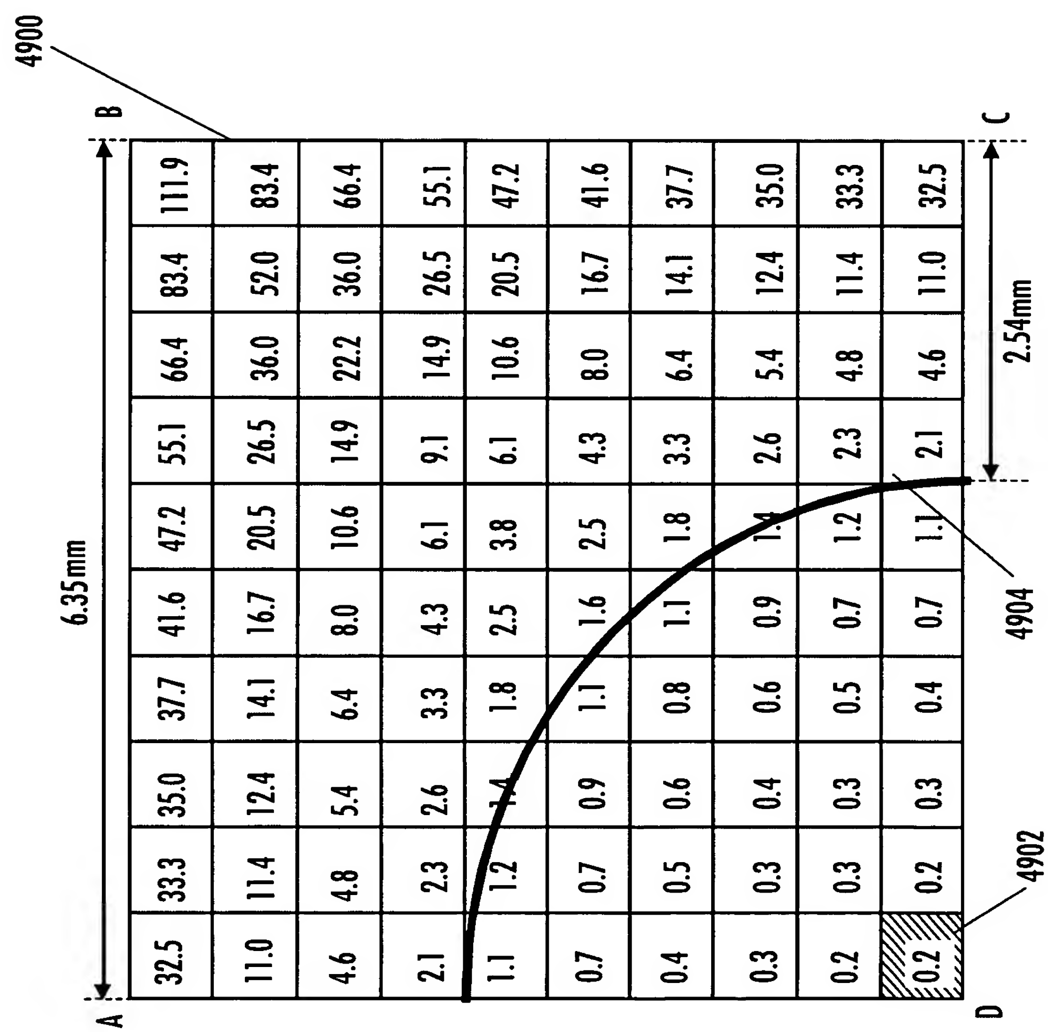
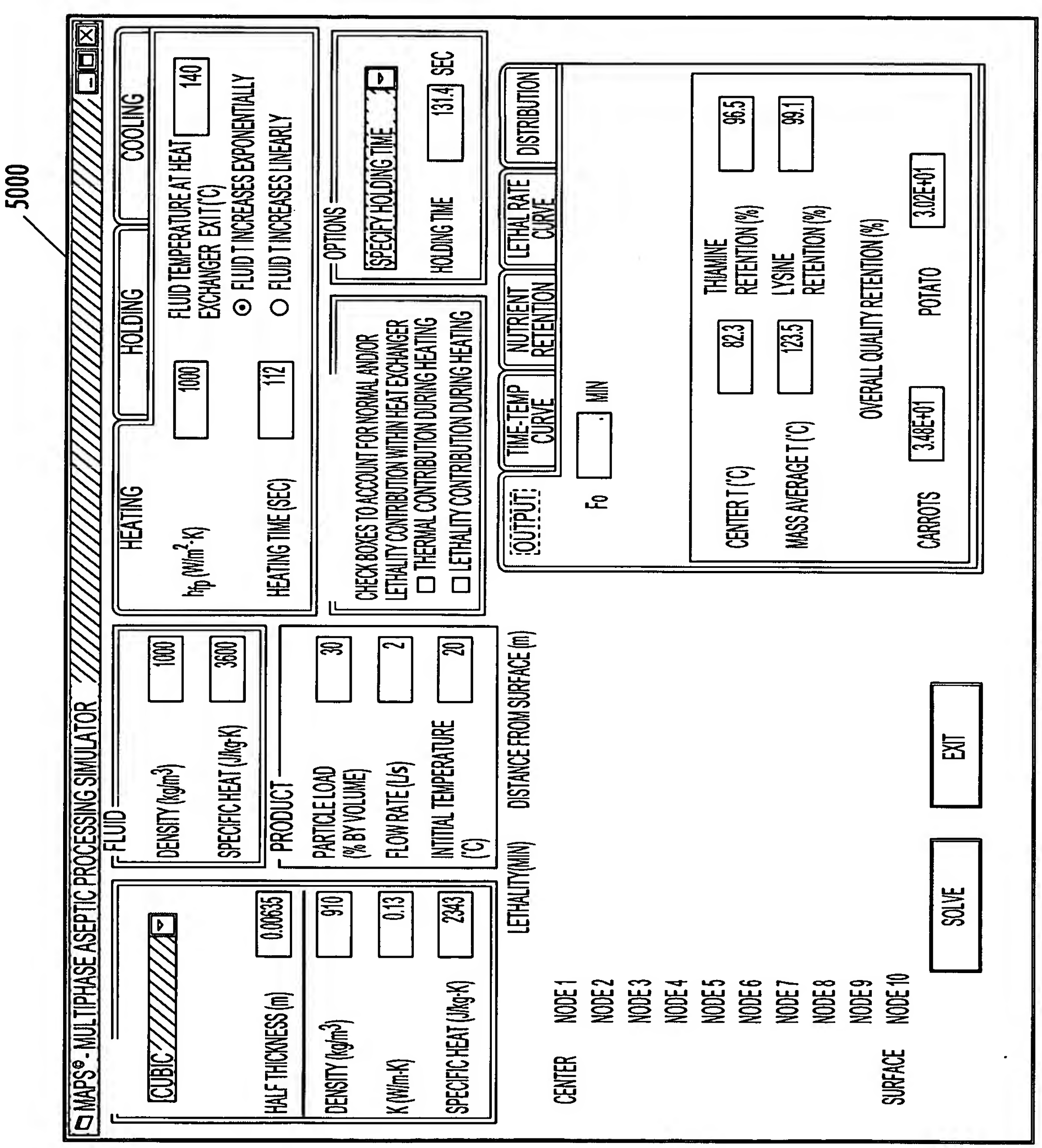


FIG. 49

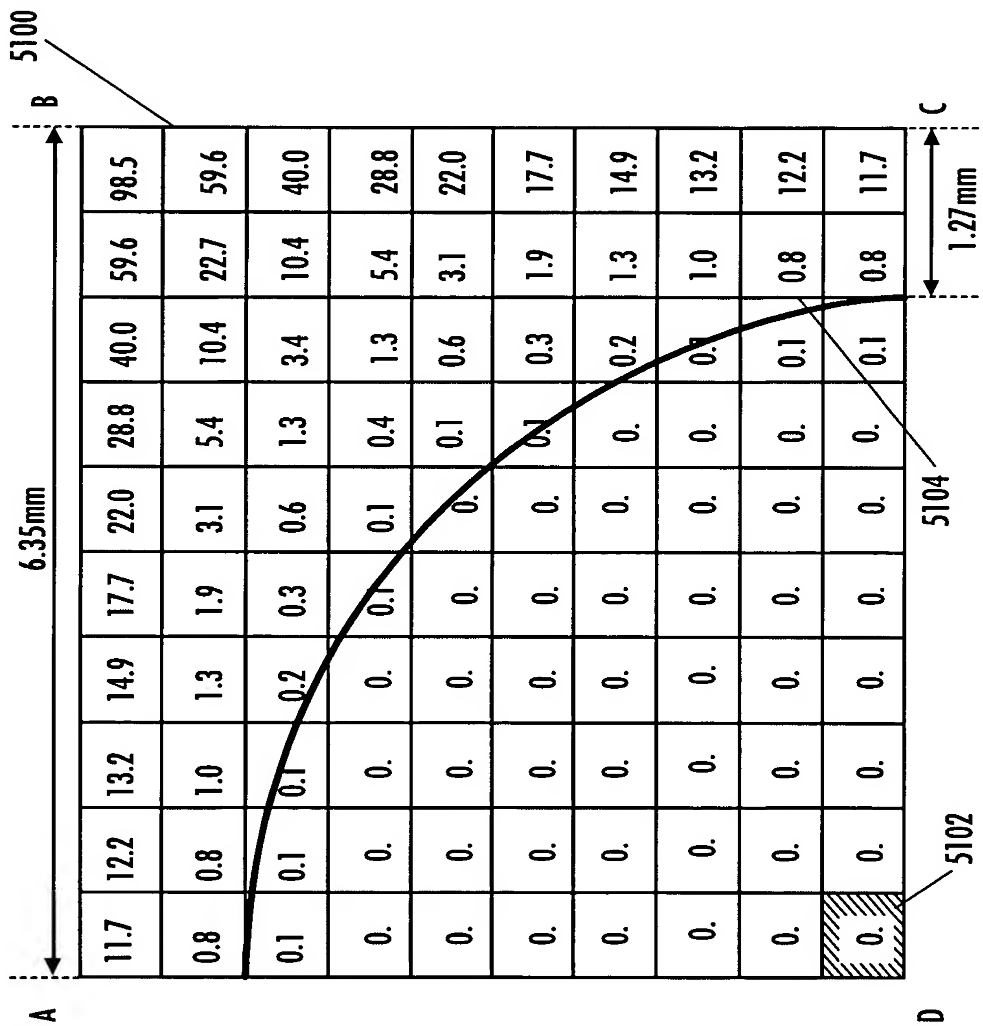
TEFLON
1/2 IN.

REPLACEMENT DRAWING.
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2



POLYPROPYLENE
1/2 IN.
TIME = 131.4 s
(HOLDING ONLY)
$\alpha = 6.10 \times 10^{-8} m^2/s$

FIG. 50



98.5	59.6	40.0	28.8	22.0	17.7	14.9	13.2	12.2	11.7
59.6	22.7	10.4	5.4	3.1	1.9	1.3	1.0	0.8	0.8
40.0	10.4	3.4	1.3	0.6	0.3	0.2	0.1	0.1	0.1
28.8	5.4	1.3	0.4	0.1	0.1	0.	0.	0.	0.
22.0	3.1	0.6	0.1	0.	0.	0.	0.	0.	0.
17.7	1.9	0.3	0.1	0.	0.	0.	0.	0.	0.
14.9	1.3	0.2	0.	0.	0.	0.	0.	0.	0.
13.2	1.0	0.1	0.	0.	0.	0.	0.	0.	0.
12.2	0.8	0.1	0.	0.	0.	0.	0.	0.	0.
11.7	0.8	0.1	0.	0.	0.	0.	0.	0.	0.

POLYPROPYLENE
1/2 IN.

FIG. 51

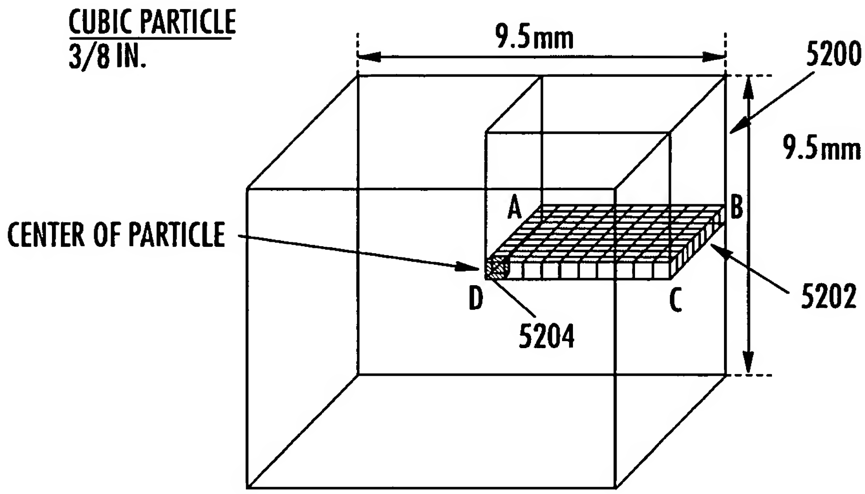

CUBIC PARTICLE
3/8 IN.
9.5mm
5200
9.5mm
A
B
CENTER OF PARTICLE
D
C
5204
5202

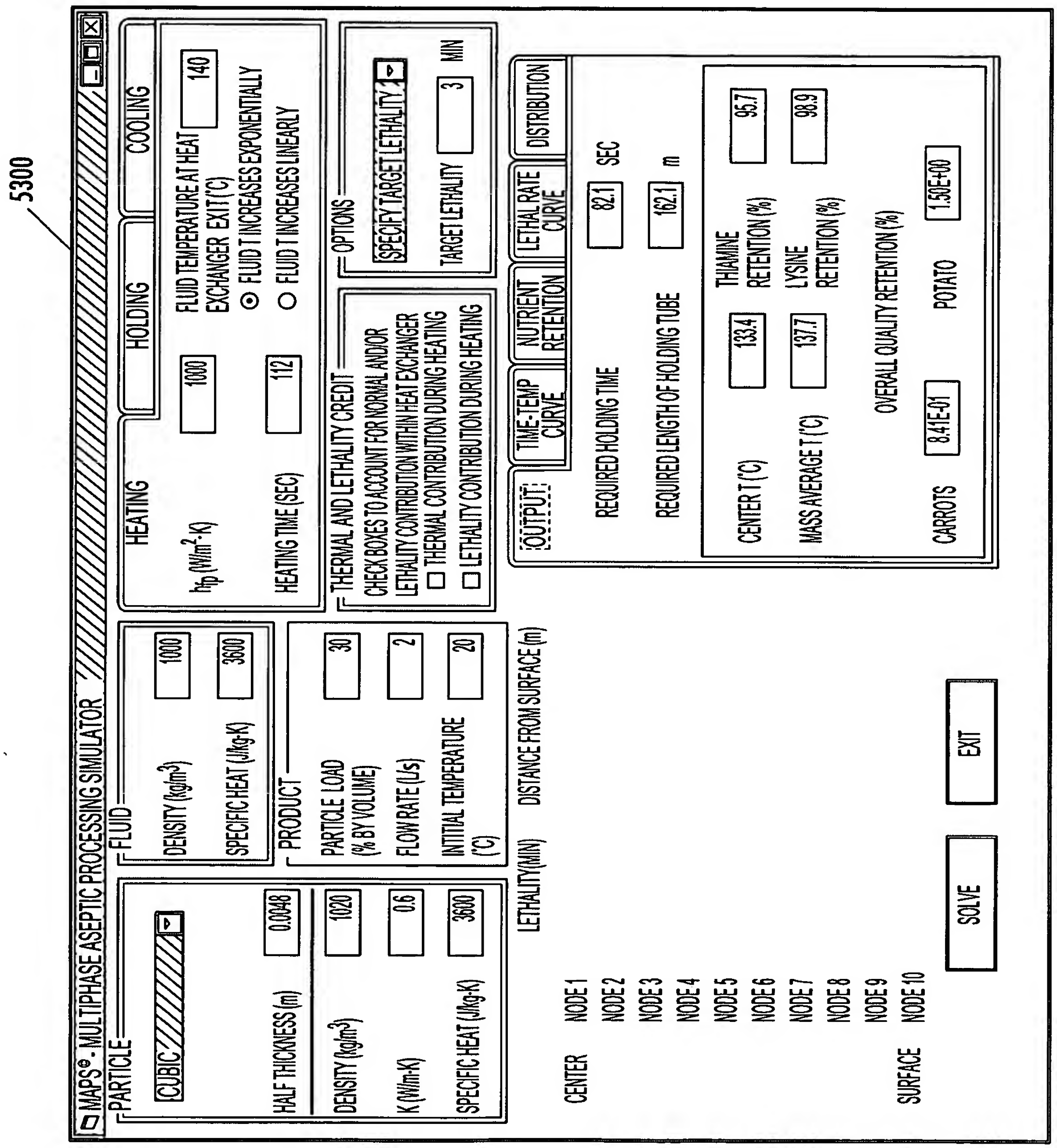
FIG. 52

REPLACEMENT DRAWING

Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment

Inventors: Palazoglu et al.

Attorney Docket No. 297/164/2



POTATO

3/8 IN.

Fo(CENTER) = 3 MIN.

TIME = 82.1 s

(HOLDING ONLY)

$\alpha = 1.63 \times 10^{-7} m^2/s$

FIG. 53

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

POTATO
3/8 IN.

5400

A B

4.8mm

4.8 mm

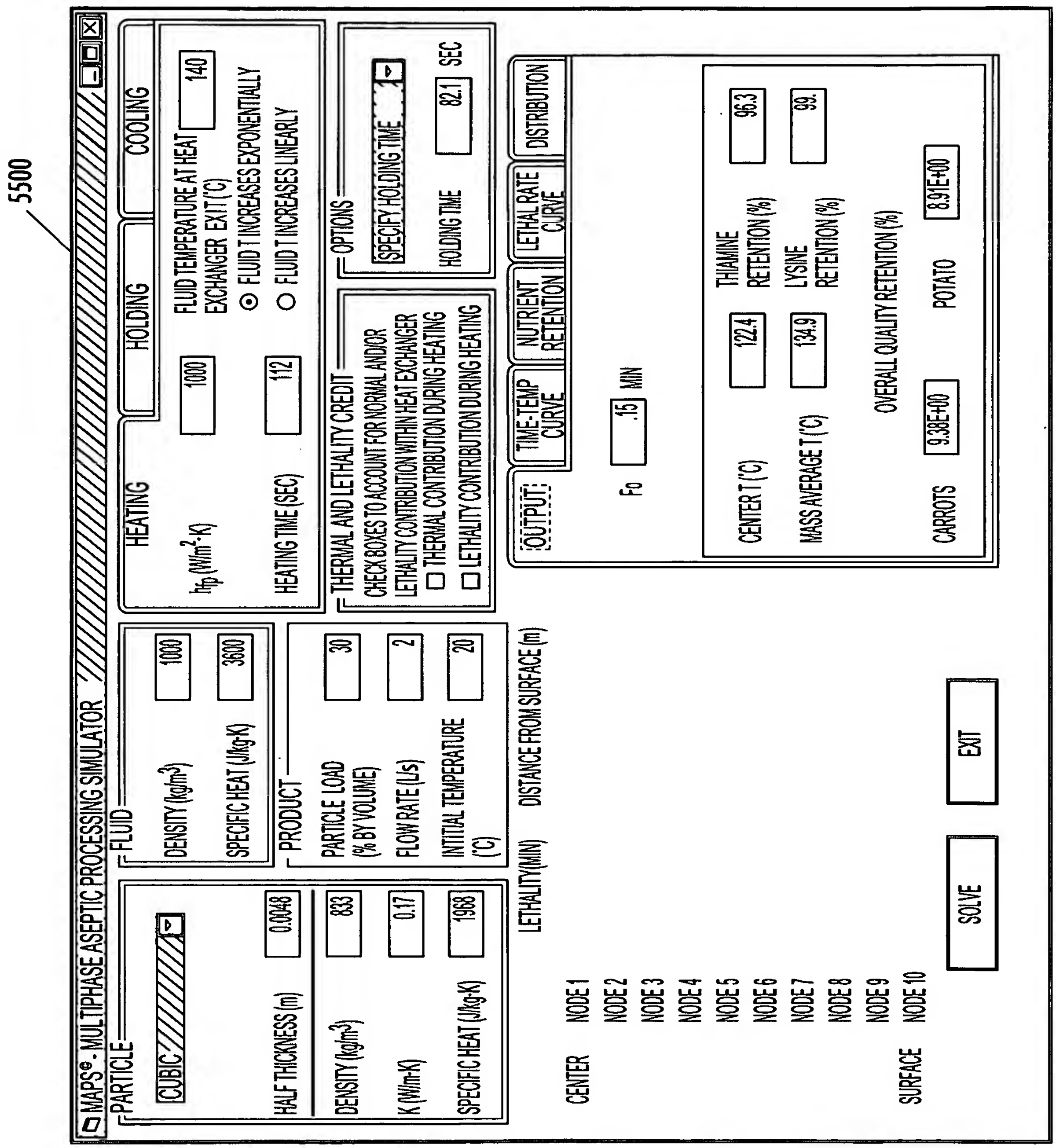
23.2	23.6	24.4	25.8	27.7	30.3	33.8	38.7	45.7	56.2
14.8	15.1	15.8	16.9	18.6	20.8	24.0	28.5	35.2	45.7
10.2	10.5	11.1	12.0	13.4	15.4	18.2	22.3	28.5	38.7
7.5	7.7	8.2	9.0	10.2	12.0	14.5	18.2	24.0	33.8
5.8	6.0	6.4	7.1	8.1	9.7	12.0	15.4	20.8	30.3
4.6	4.8	5.2	5.8	6.7	8.1	10.2	13.4	18.6	27.7
3.9	4.1	4.4	4.9	5.8	7.1	9.0	12.0	16.9	25.8
3.4	3.6	3.9	4.4	5.2	6.4	8.2	11.1	15.8	24.4
3.1	3.3	3.6	4.1	4.8	6.0	7.7	10.5	15.1	23.6
3.0	3.1	3.4	3.9	4.6	5.8	7.5	10.2	14.8	23.2

D C

5402

FIG. 54

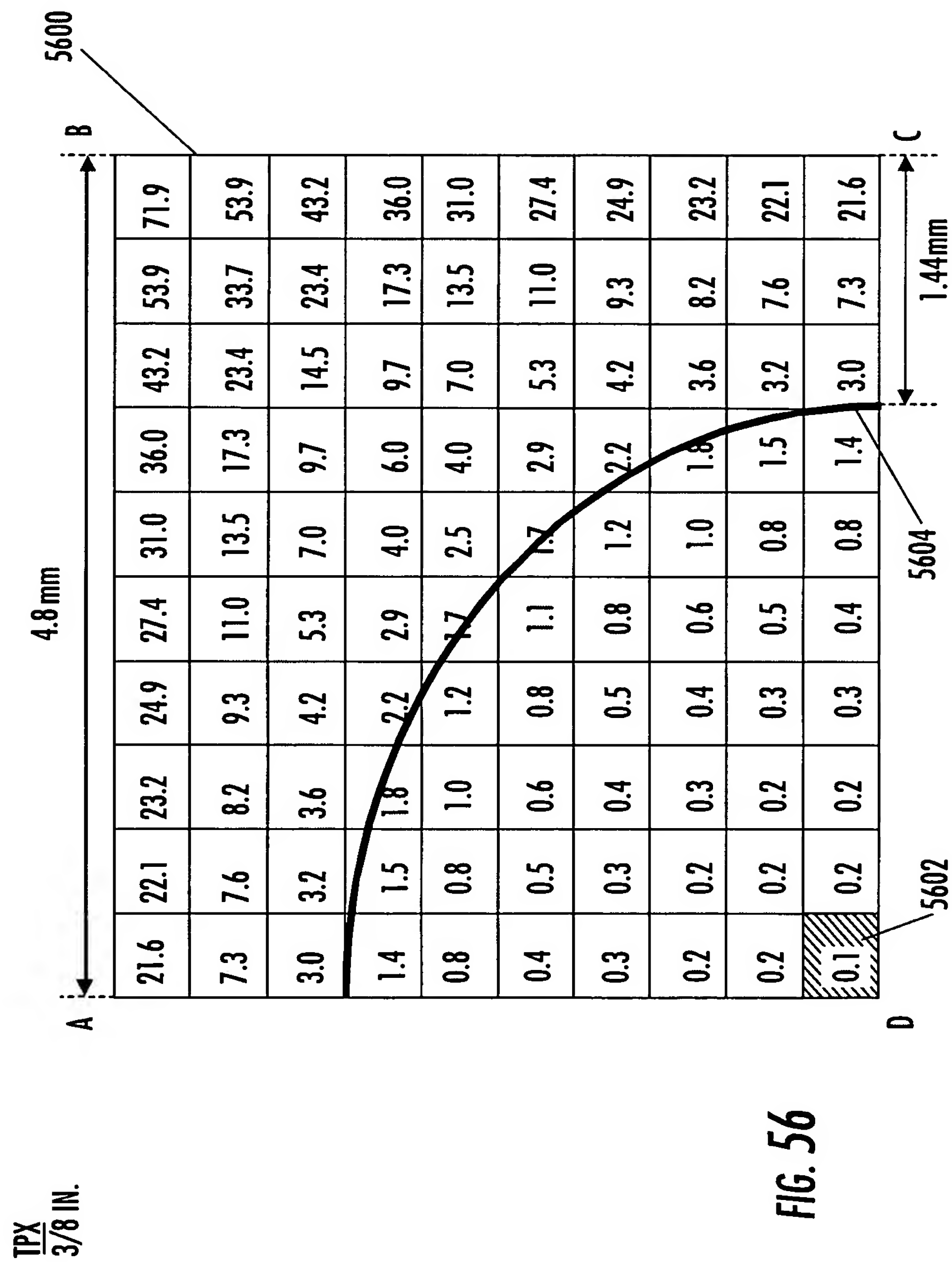
REPLACEMENT DRAWING
Title: Methods, Systems, and Devices
for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2



TPX
3/8 IN.
TIME = 82.1 s
(HOLDING ONLY)
$\alpha = 1.04 \times 10^{-7} m^2/s$

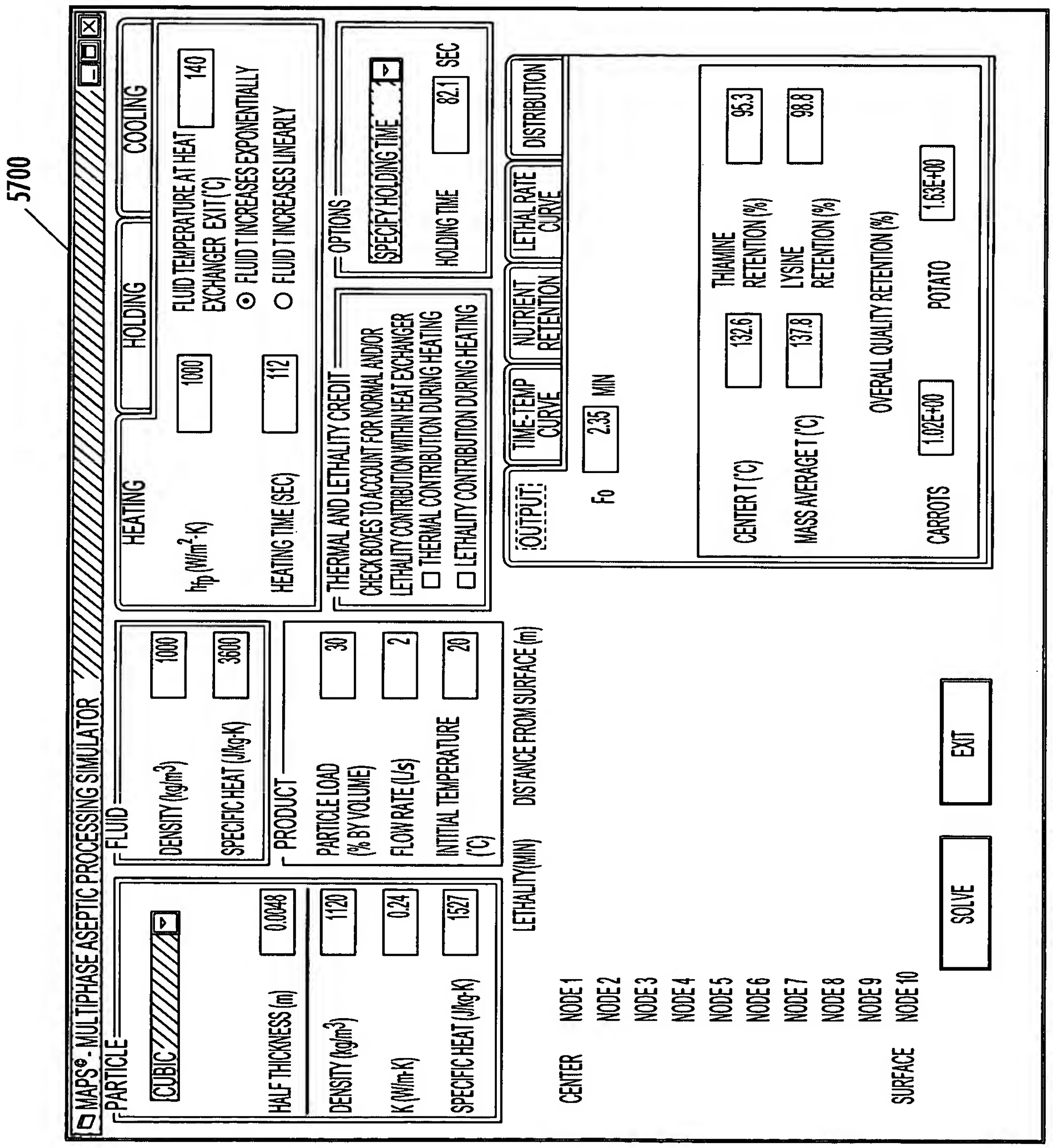
FIG. 55

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2



21.6	22.1	23.2	24.9	27.4	31.0	36.0	43.2	53.9	71.9
7.3	7.6	8.2	9.3	11.0	13.5	17.3	23.4	33.7	53.9
3.0	3.2	3.6	4.2	5.3	7.0	9.7	14.5	23.4	43.2
1.4	1.5	1.8	2.2	2.9	4.0	6.0	9.7	17.3	36.0
0.8	0.8	1.0	1.2	1.7	2.5	4.0	7.0	13.5	31.0
0.4	0.5	0.6	0.8	1.1	1.7	2.9	5.3	11.0	27.4
0.3	0.3	0.4	0.5	0.8	1.2	2.2	4.2	9.3	24.9
0.2	0.2	0.3	0.4	0.6	1.0	1.8	3.6	8.2	23.2
0.2	0.2	0.2	0.3	0.5	0.8	1.5	3.2	7.6	22.1
0.1	0.2	0.2	0.3	0.4	0.8	1.4	3.0	7.3	21.6

FIG. 56



NYLON
3/8 IN.
TIME = 82.1 s
(HOLDING ONLY)
$\alpha = 1.40 \times 10^{-7}\ m^2/s$

FIG. 57

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

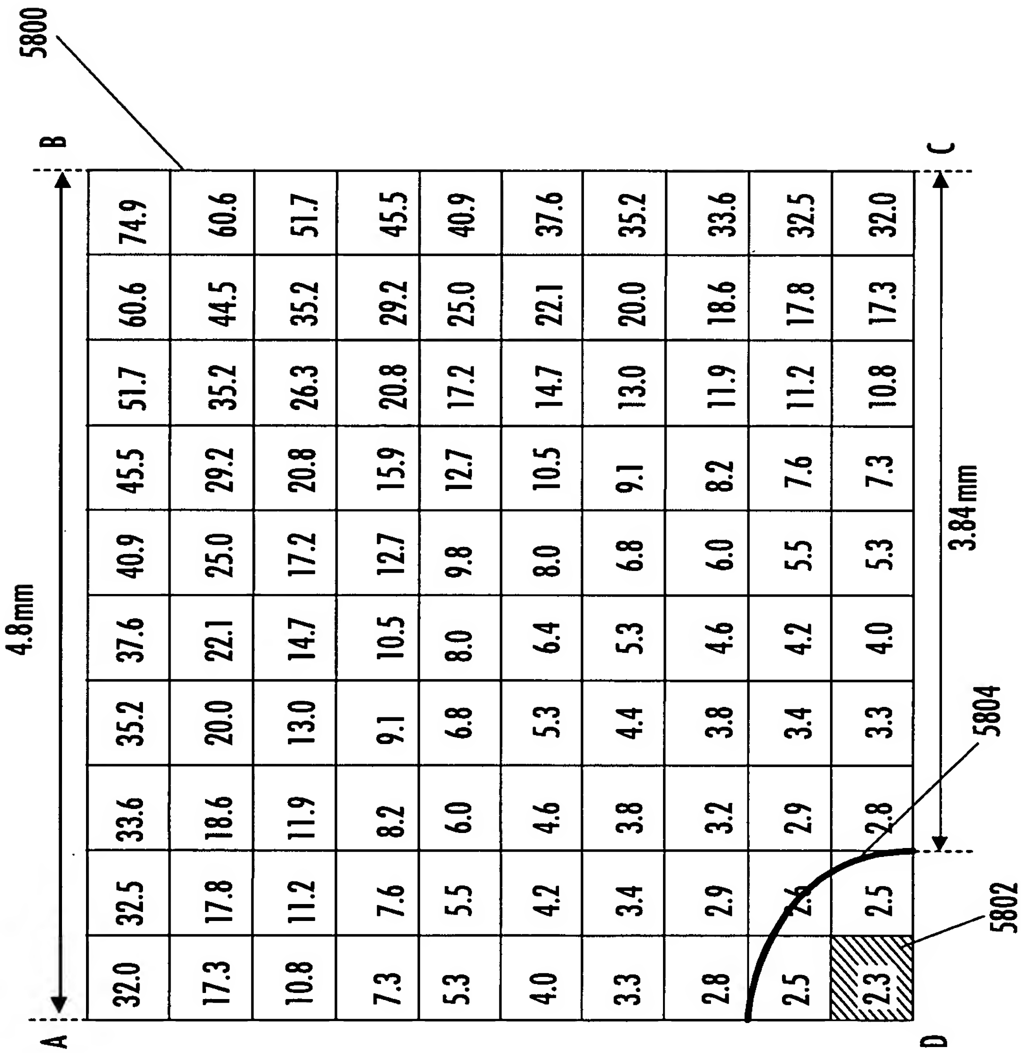


FIG. 58

NYLON
3/8IN.

5900

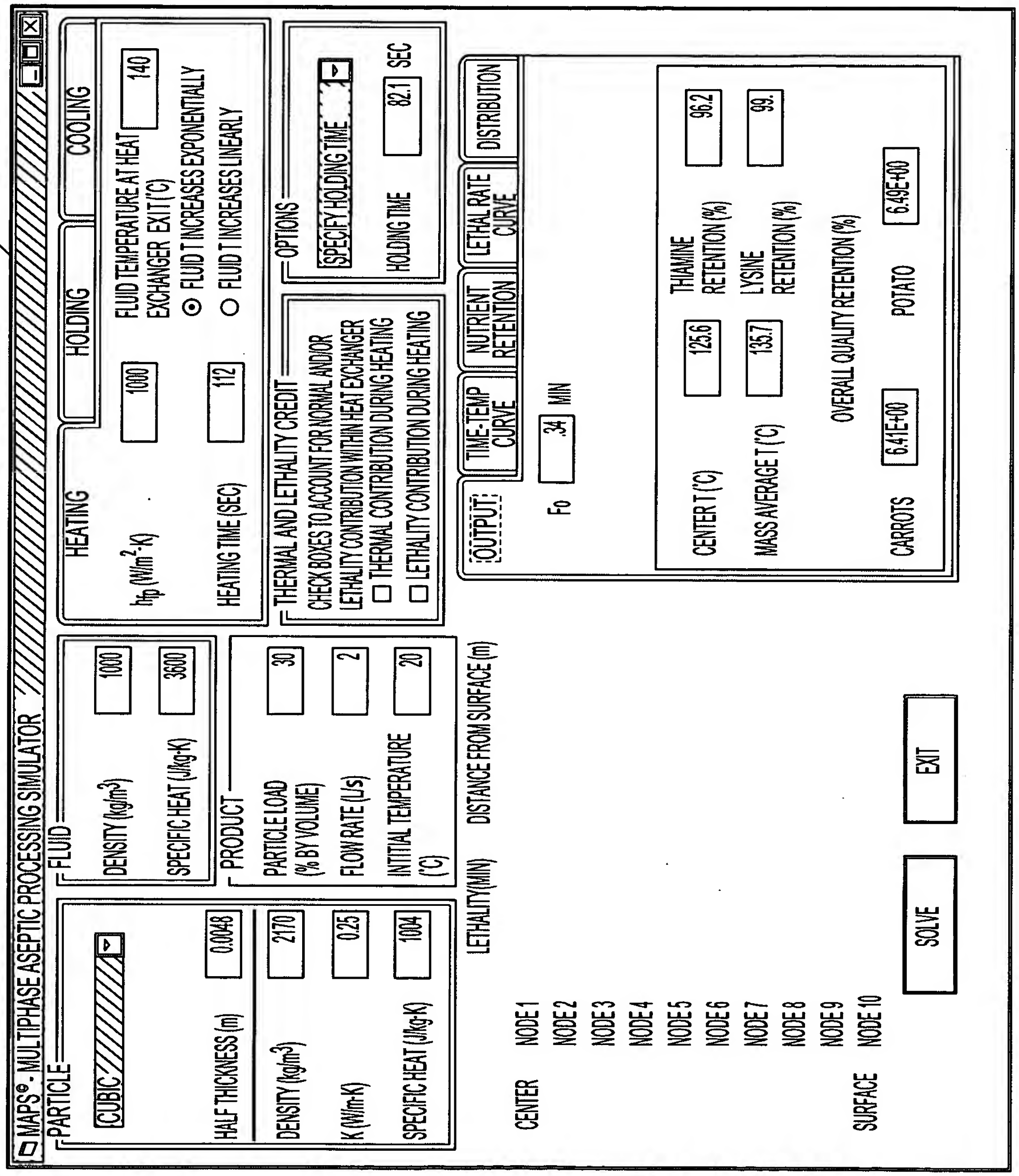
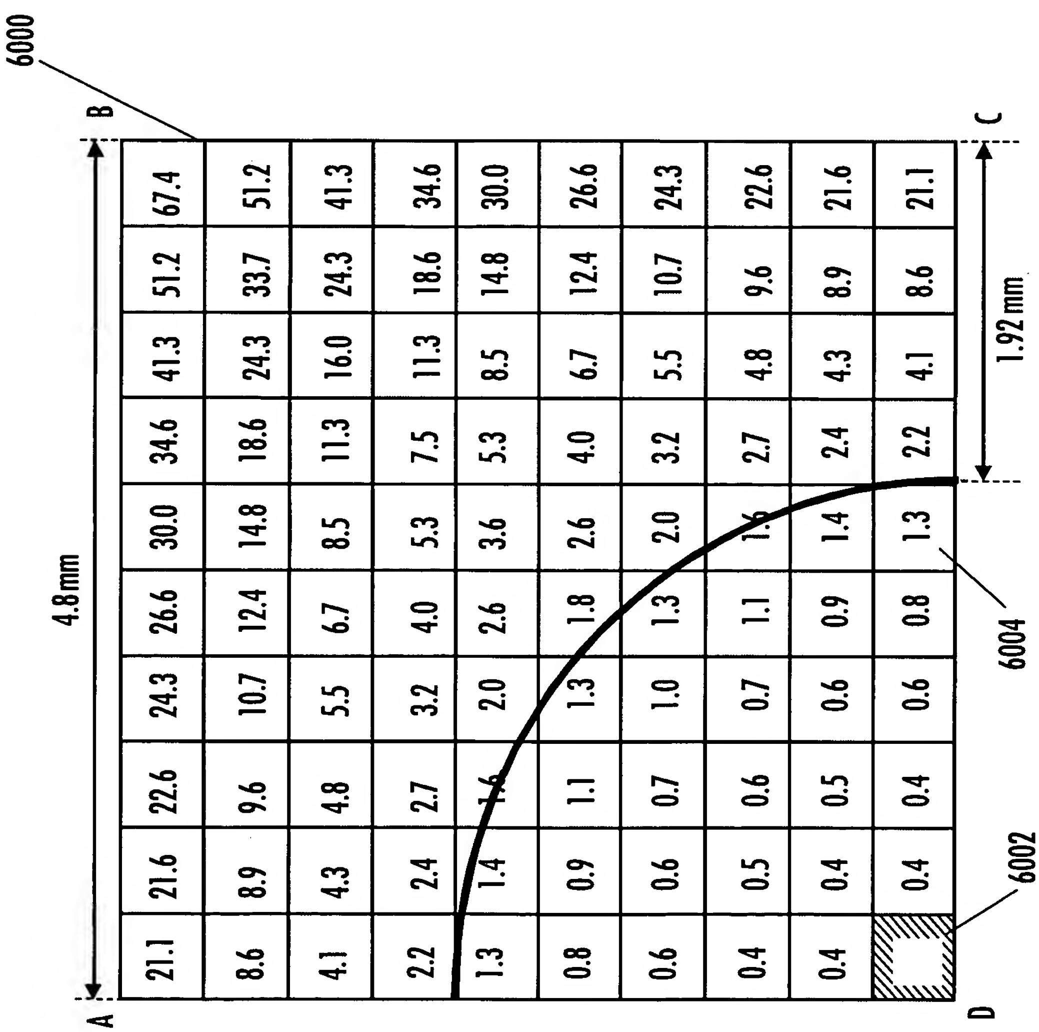


FIG. 59

TEFLON
3/8 IN.
TIME = 82.1 s
(HOLDING ONLY)
$\alpha = 1.15 \times 10^{-7} m^2/s$

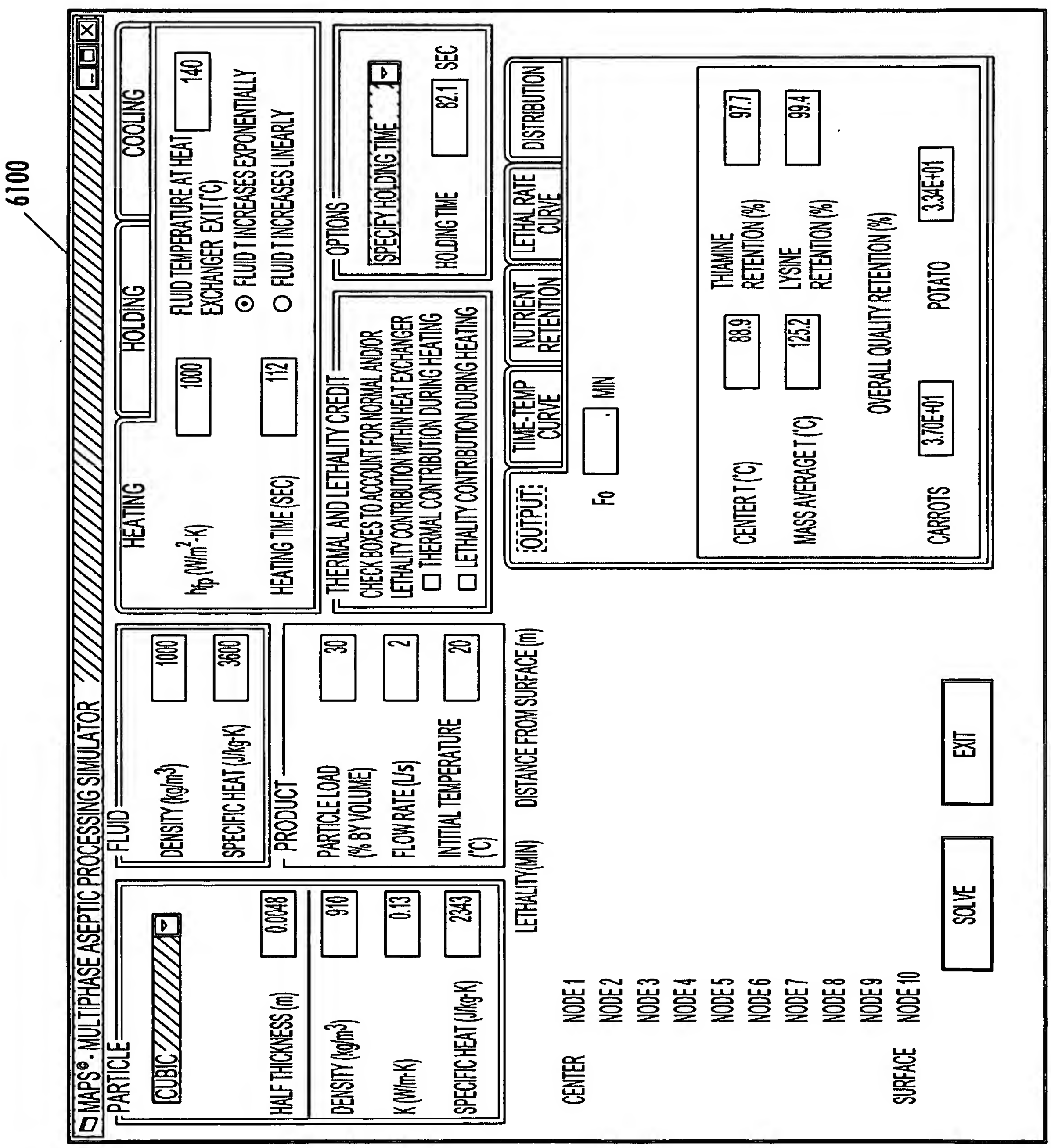
REPLACEMENT DRAWING:
Title: Methods, Systems, and Devices
for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2



21.1	21.6	22.6	24.3	26.6	30.0	34.6	41.3	51.2	67.4
8.6	8.9	9.6	10.7	12.4	14.8	18.6	24.3	33.7	51.2
4.1	4.3	4.8	5.5	6.7	8.5	11.3	16.0	24.3	41.3
2.2	2.4	2.7	3.2	4.0	5.3	7.5	11.3	18.6	34.6
1.3	1.4	1.6	2.0	2.6	3.6	5.3	8.5	14.8	30.0
0.8	0.9	1.1	1.3	1.8	2.6	4.0	6.7	12.4	26.6
0.6	0.6	0.7	1.0	1.3	2.0	3.2	5.5	10.7	24.3
0.4	0.5	0.6	0.7	1.1	1.6	2.7	4.8	9.6	22.6
0.4	0.4	0.5	0.6	0.9	1.4	2.4	4.3	8.9	21.6
	0.4	0.4	0.6	0.8	1.3	2.2	4.1	8.6	21.1

TEFLON
3/8 IN.

FIG. 60



POLYPROPYLENE
3/8 IN.
TIME = 82.1
(HOLDING ONLY)
$\alpha = 6.10 \times 10^{-8} m^2/s$

FIG. 61

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

POLYPROPYLENE
3/8 IN.

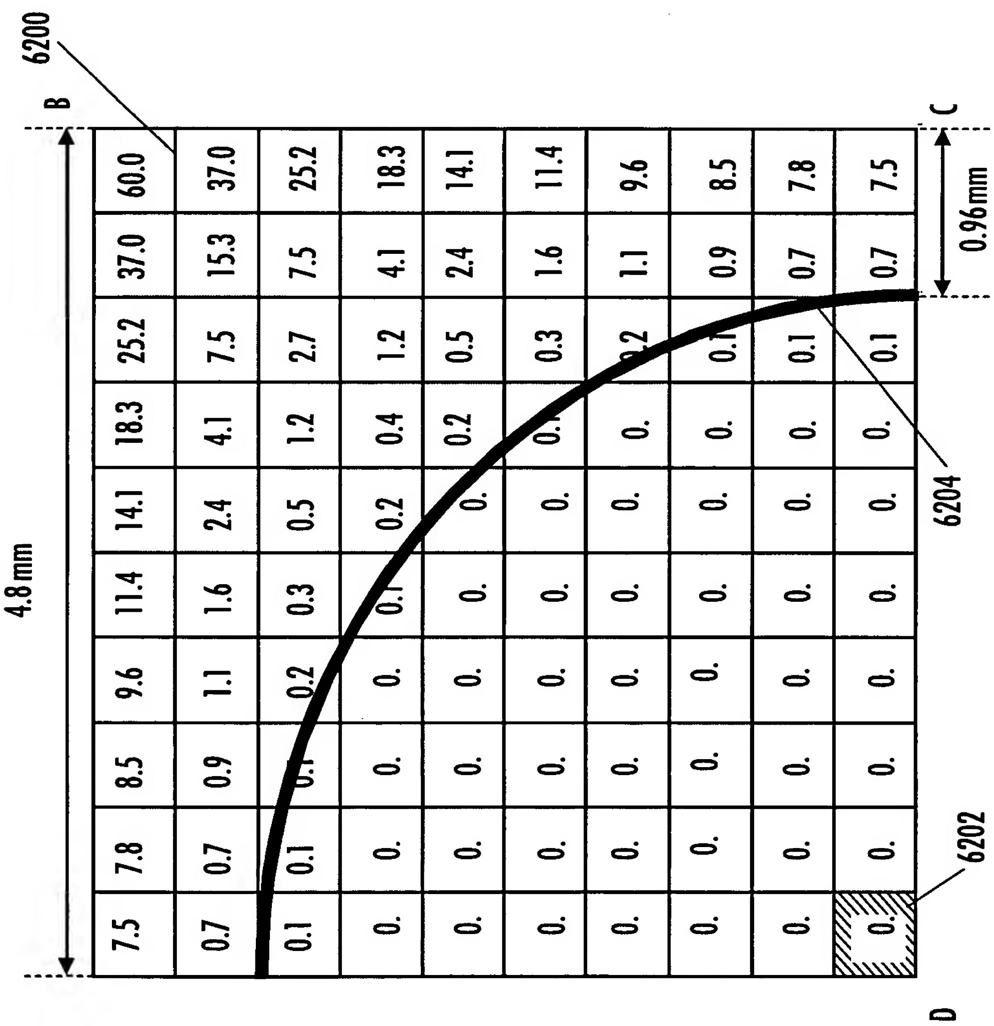


FIG. 62

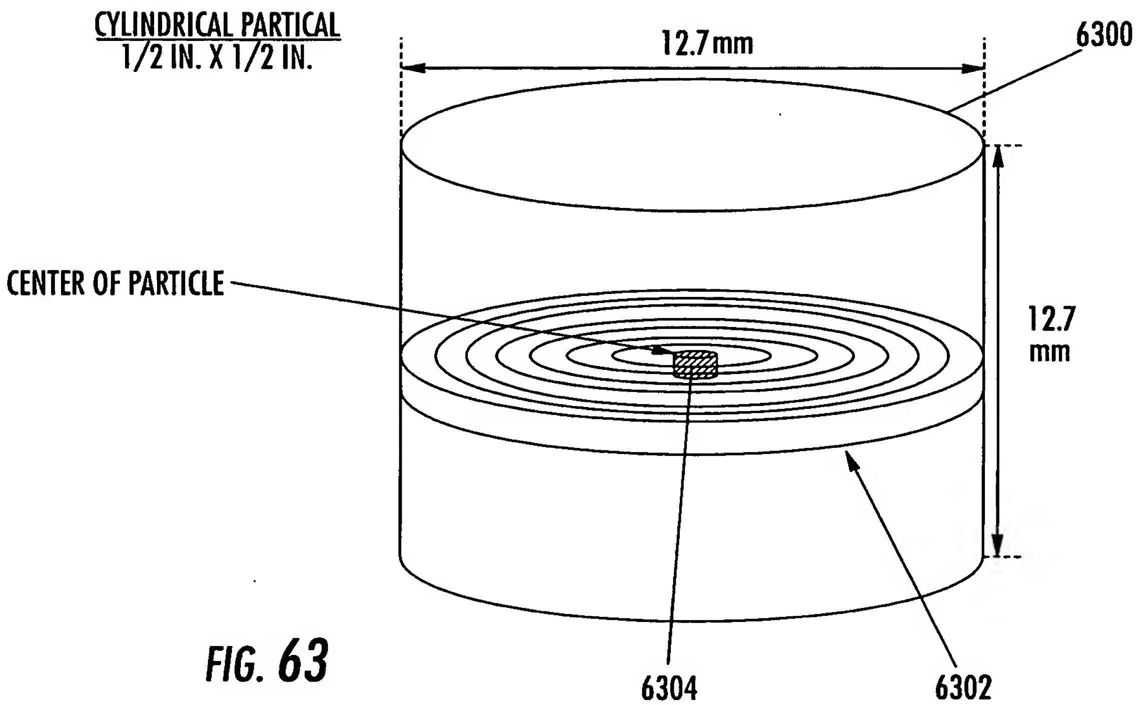

CYLINDRICAL PARTICAL
1/2 IN. X 1/2 IN.
12.7mm
6300
CENTER OF PARTICLE
12.7
mm
6304
6302

FIG. 63

REPLACEMENT DRAWING

Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

POTATO
1/2 IN. X 1/2 IN.
F_0(CENTER) = 3 MIN.
TIME = 120.5 s
(HOLDING ONLY)
$\alpha = 1.63 \times 10^{-7} m^2/s$

6400

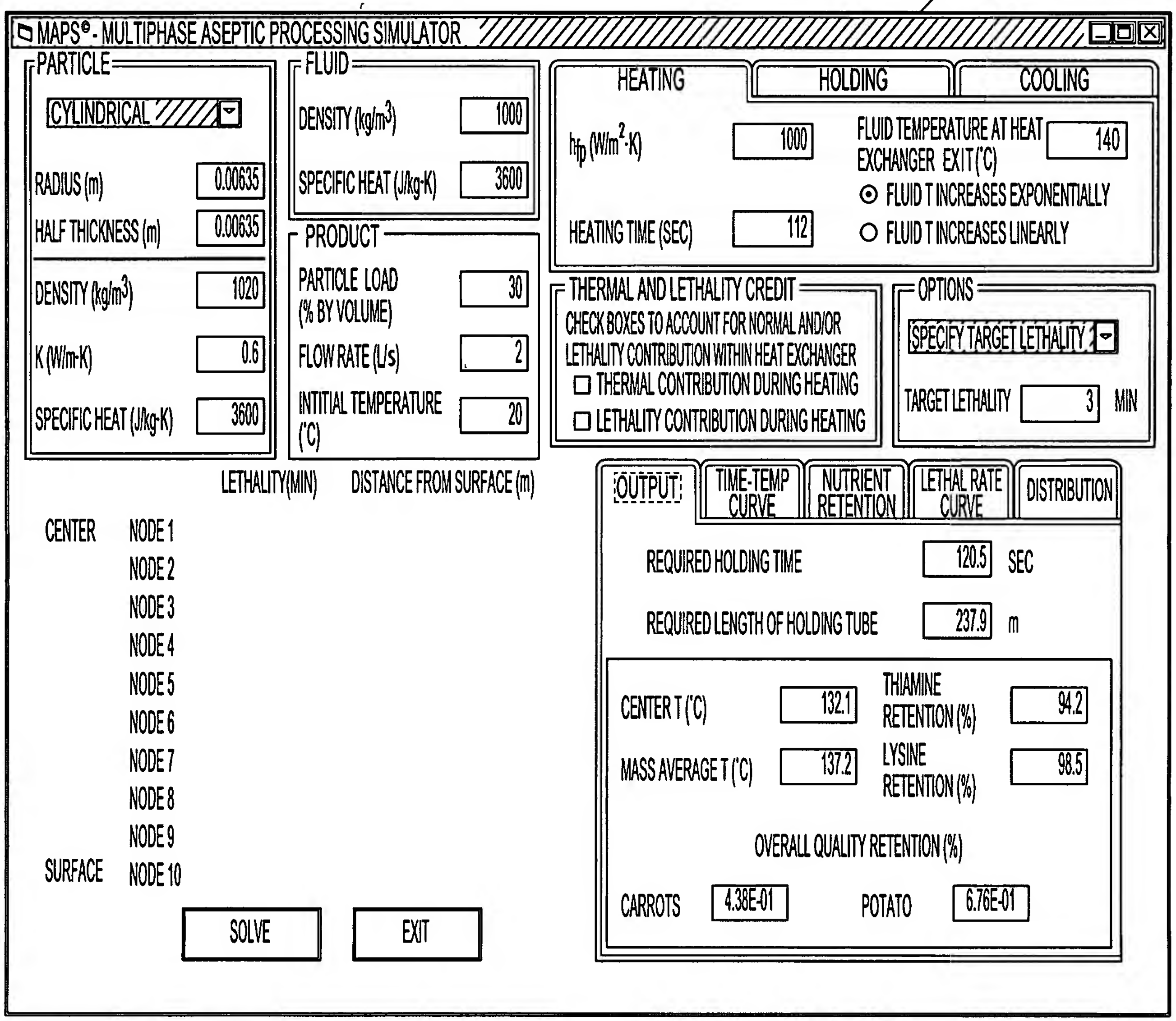


FIG. 64

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

POTATO
1/2 IN. X 1/2 IN.

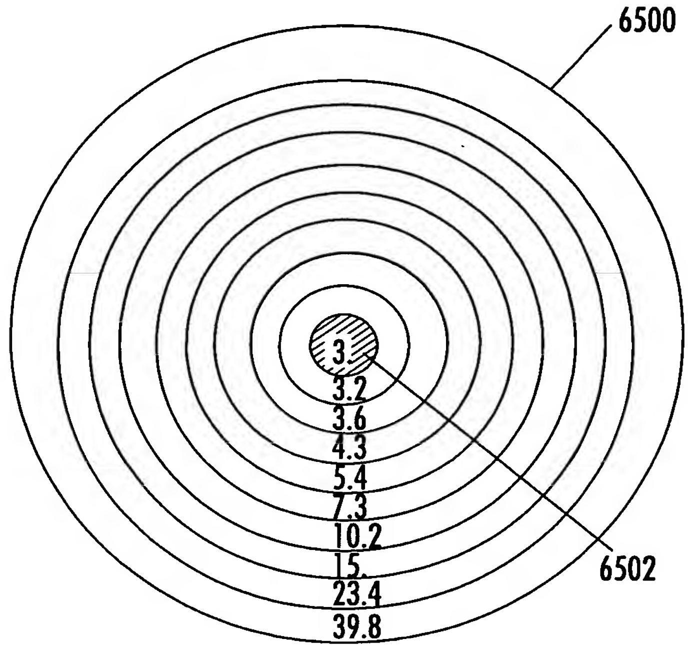


FIG. 65

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

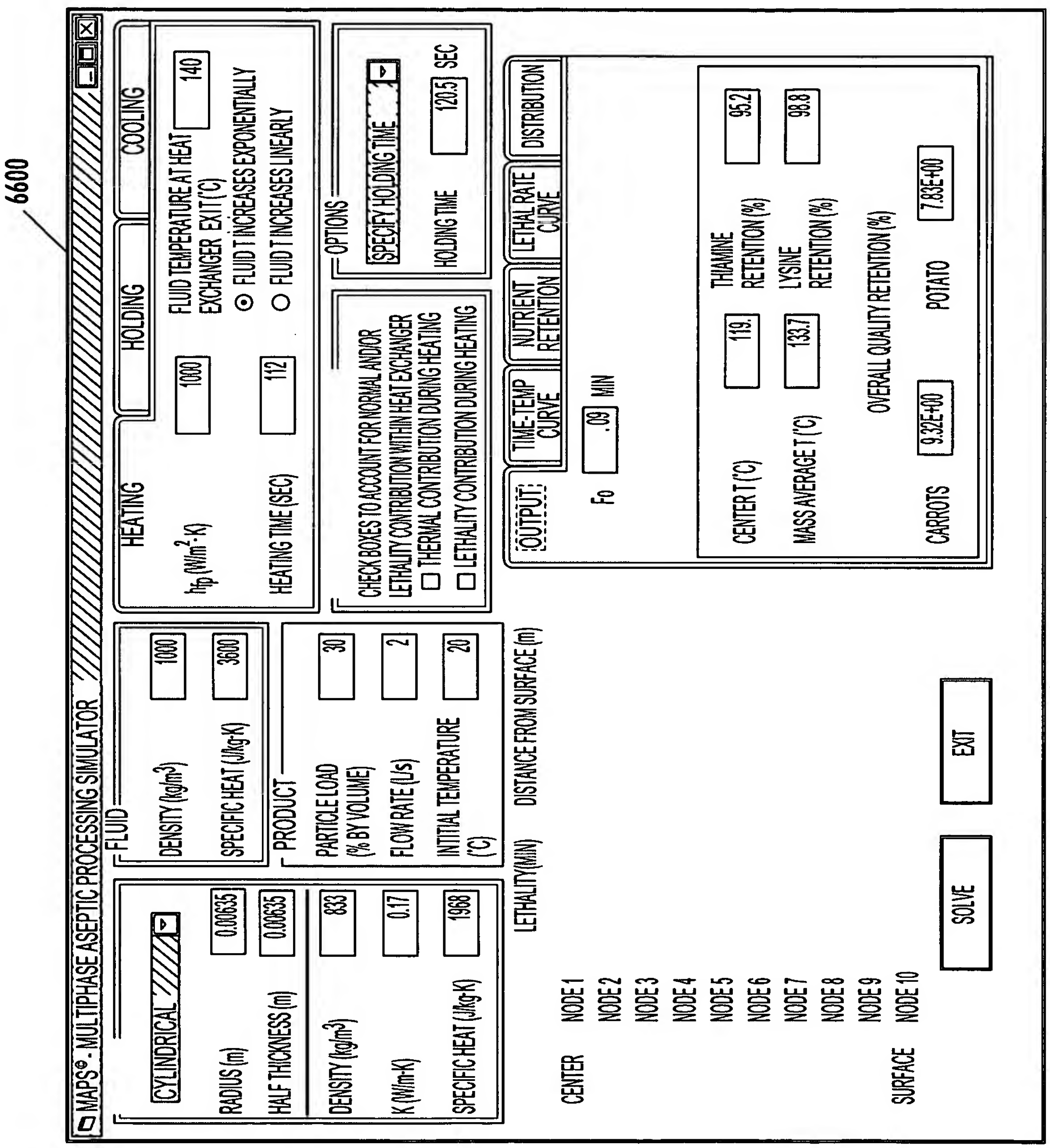


FIG. 66

TPX
1/2 IN. X 1/2 IN.
TIME = 120.5 s
(HOLDING ONLY)
$\alpha = 1.04 \times 10^{-7}$ m^2/s

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

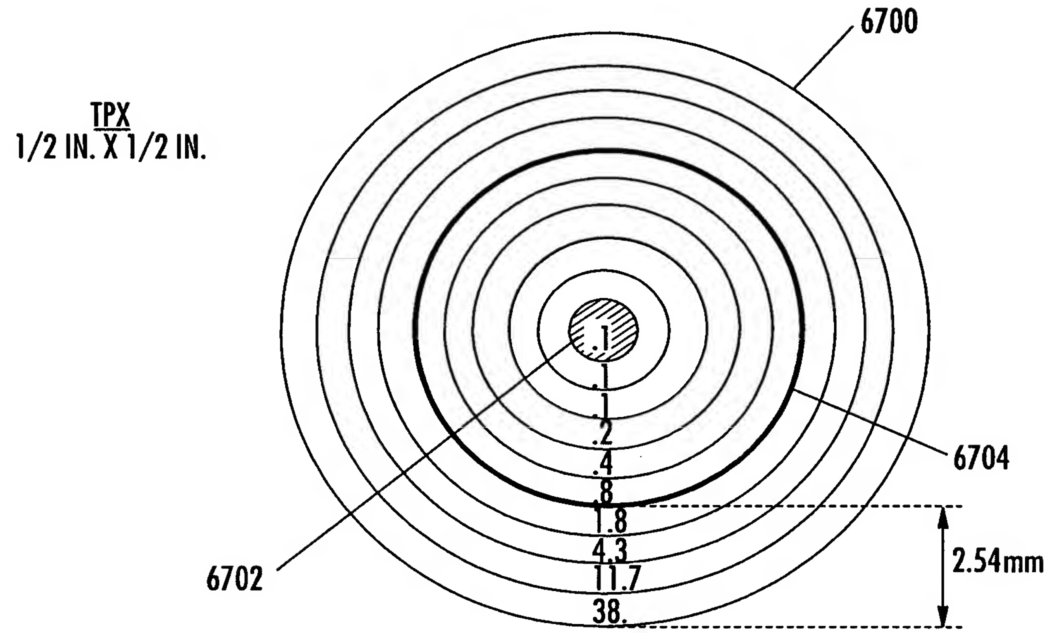
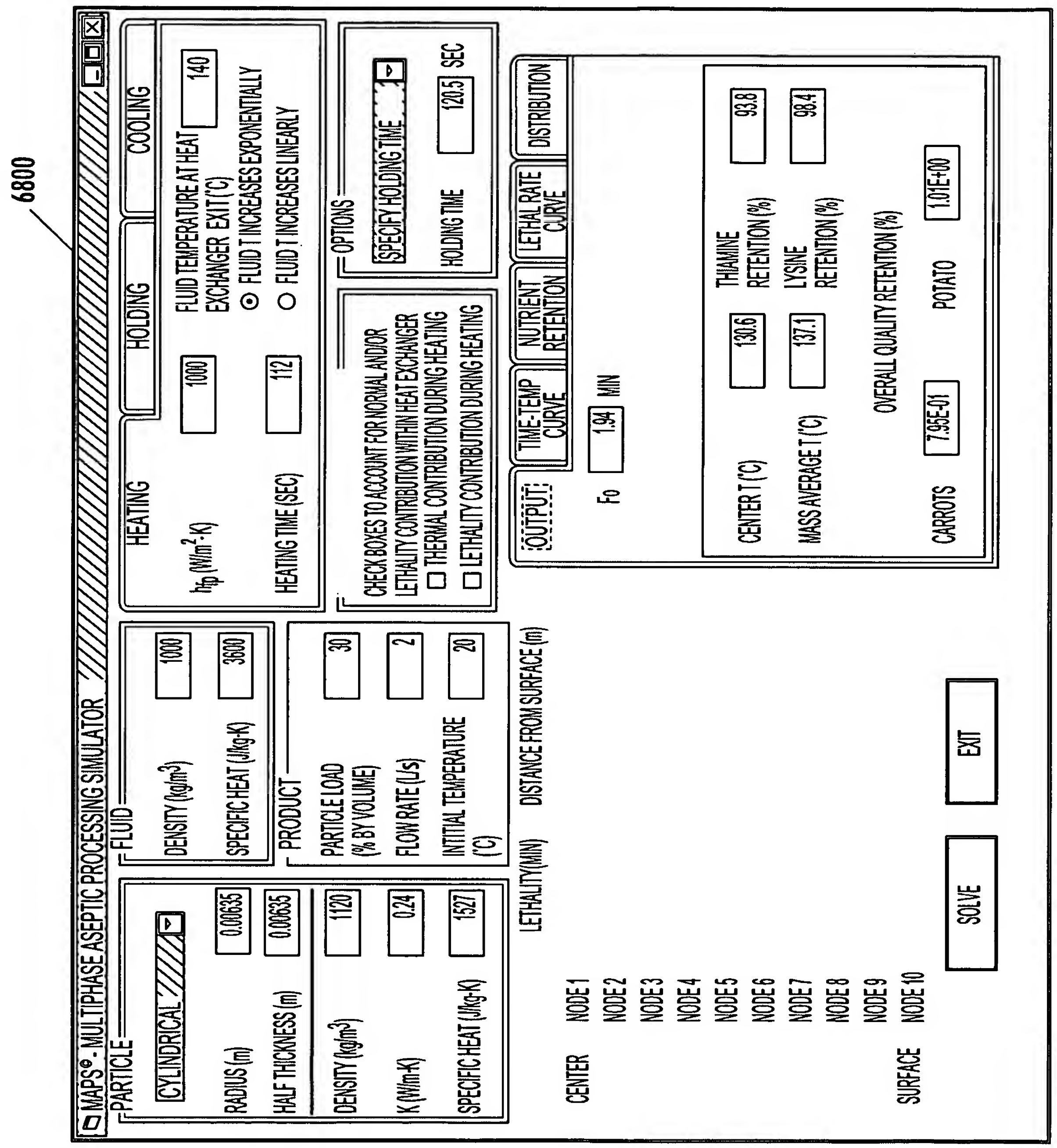


FIG. 67

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices
for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2



NYLON
1/2 IN. X 1/2 IN.
TIME = 120.5 s
(HOLDING ONLY)
$\alpha = 1.40 \times 10^{-7}\ m^2/s$

FIG. 68

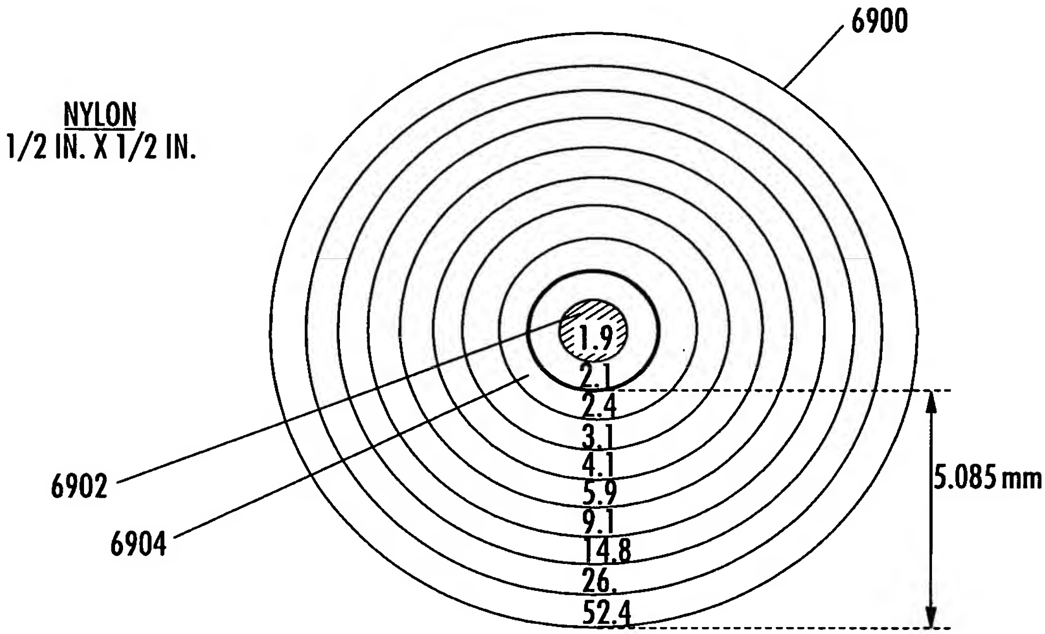
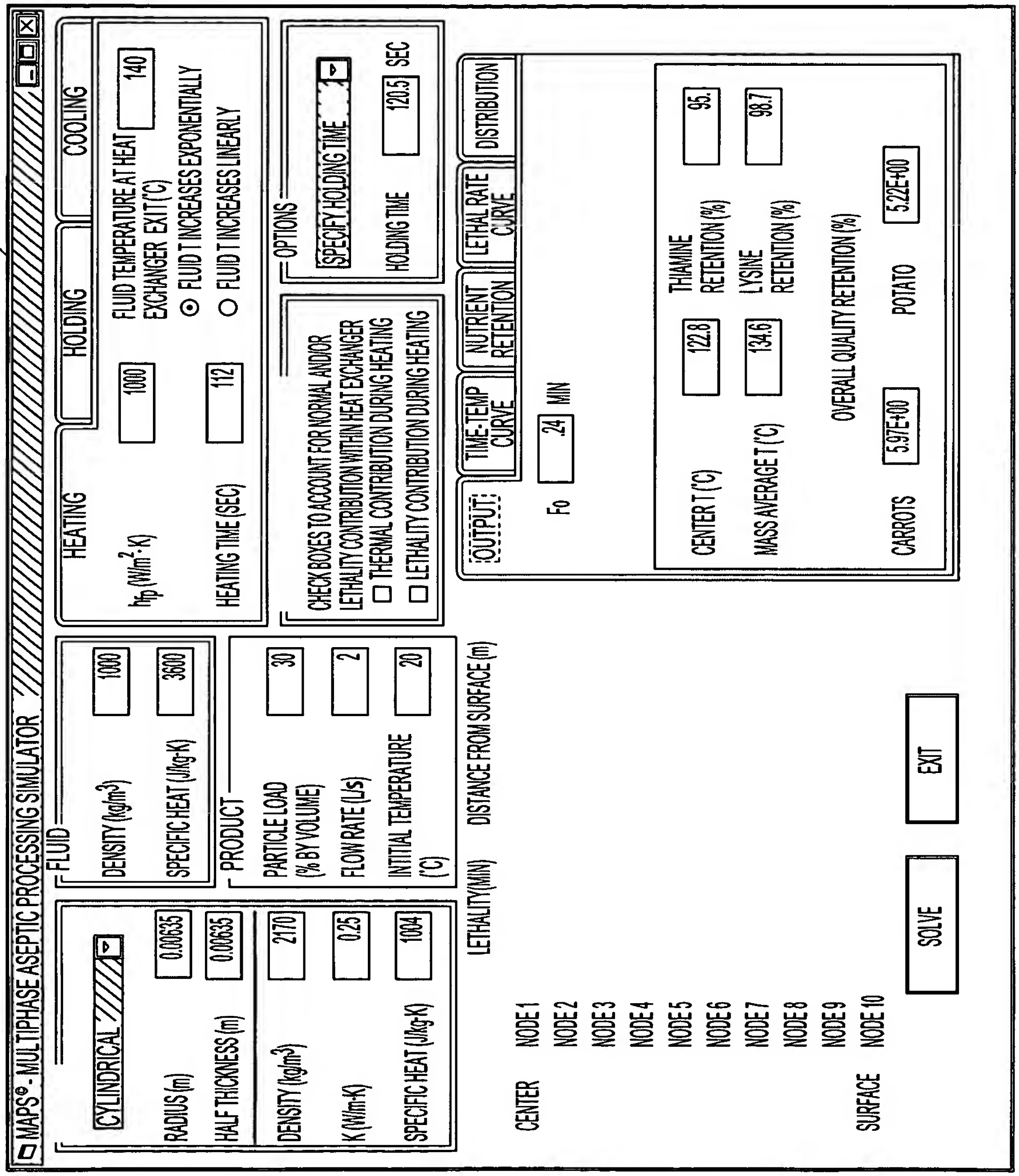

NYLON
1/2 IN. X 1/2 IN.
6900
1.9
2.1
2.4
3.1
4.1
5.9
9.1
14.8
26.
52.4
5.085 mm
6902
6904

FIG. 69

REPLACEMENT DRAWING

Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

7000



TEFLON
1/2 IN. X 1/2 IN.
TIME = 120.5 s
(HOLDING ONLY)
$\alpha = 1.15 \times 10^{-7}\ m^2/s$

FIG. 70

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

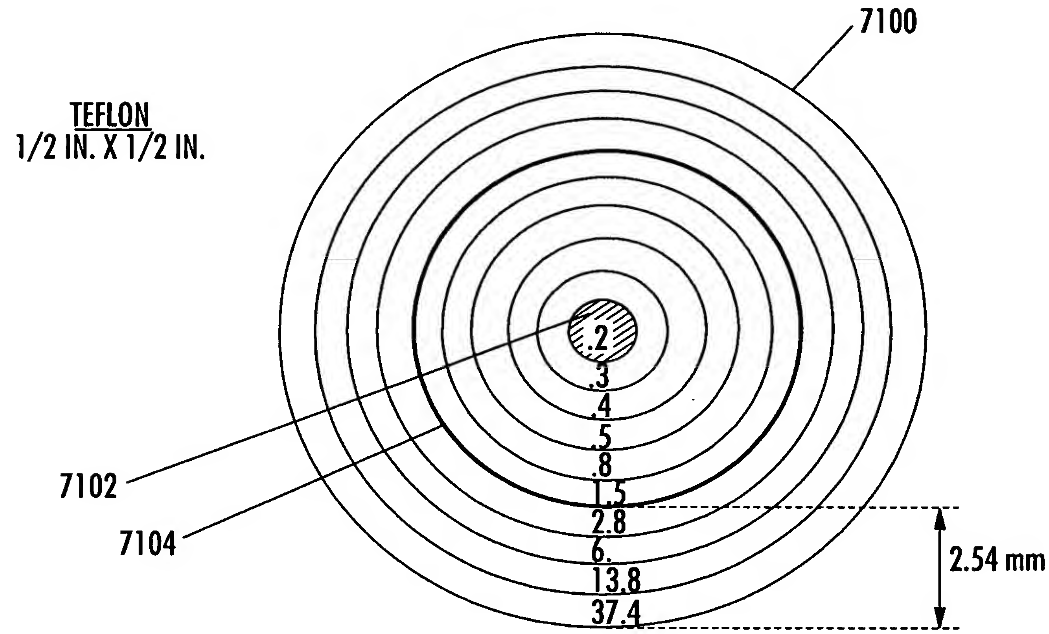
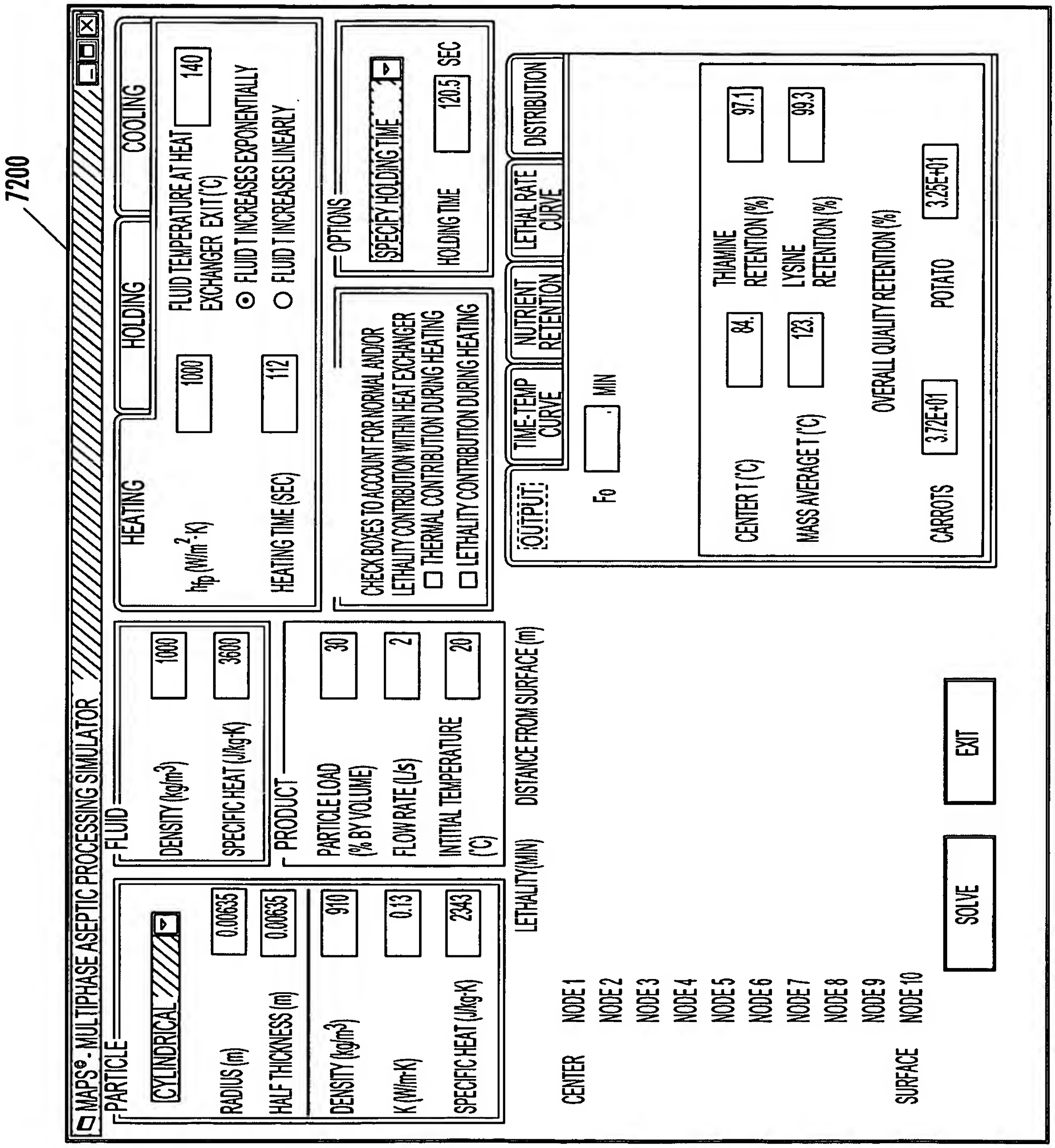


FIG. 71



POLYPROPYLENE
1/2 IN. X 1/2 IN.
TIME = 120.5 s
(HOLDING ONLY)
$\alpha = 6.10 \times 10^{-8} m^2/s$

FIG. 72

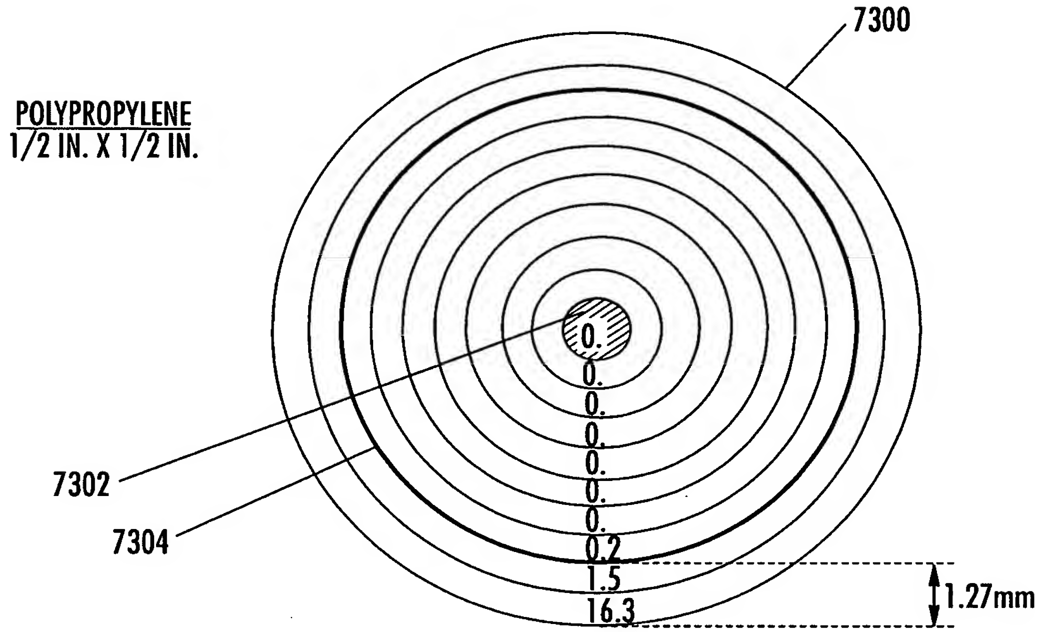

POLYPROPYLENE
1/2 IN. X 1/2 IN.
7300
7302
7304
0.
0.
0.
0.
0.
0.
0.
0.2
1.5
16.3
1.27mm

FIG. 73

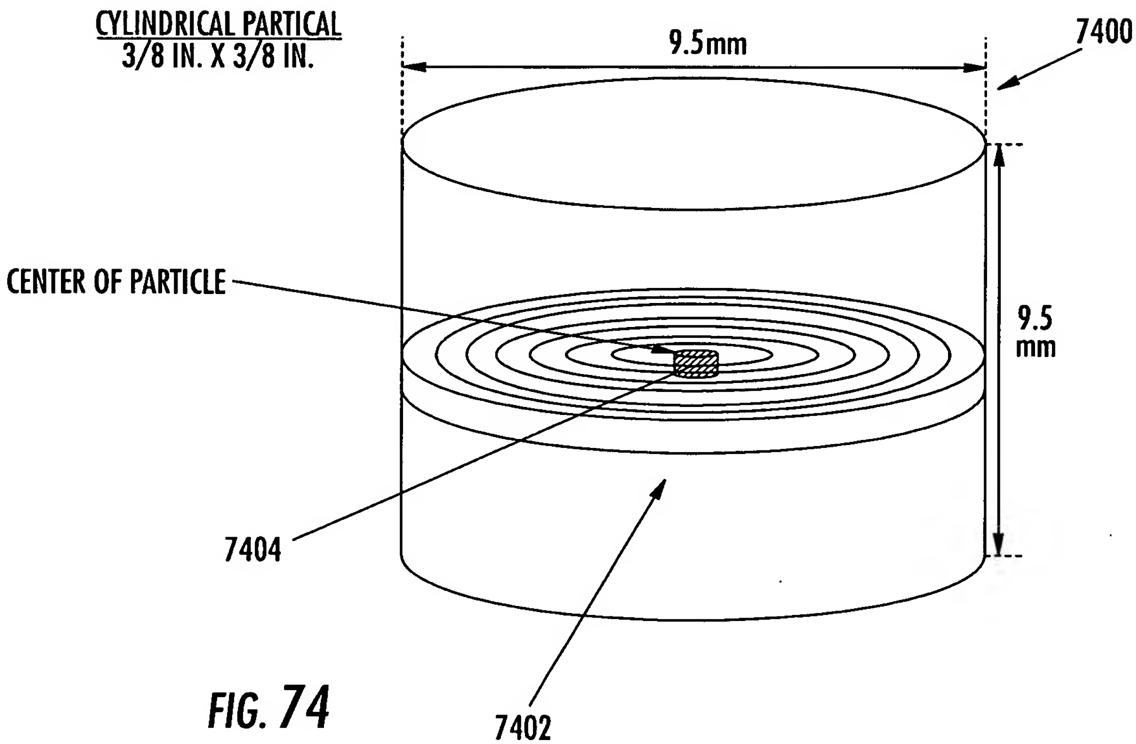
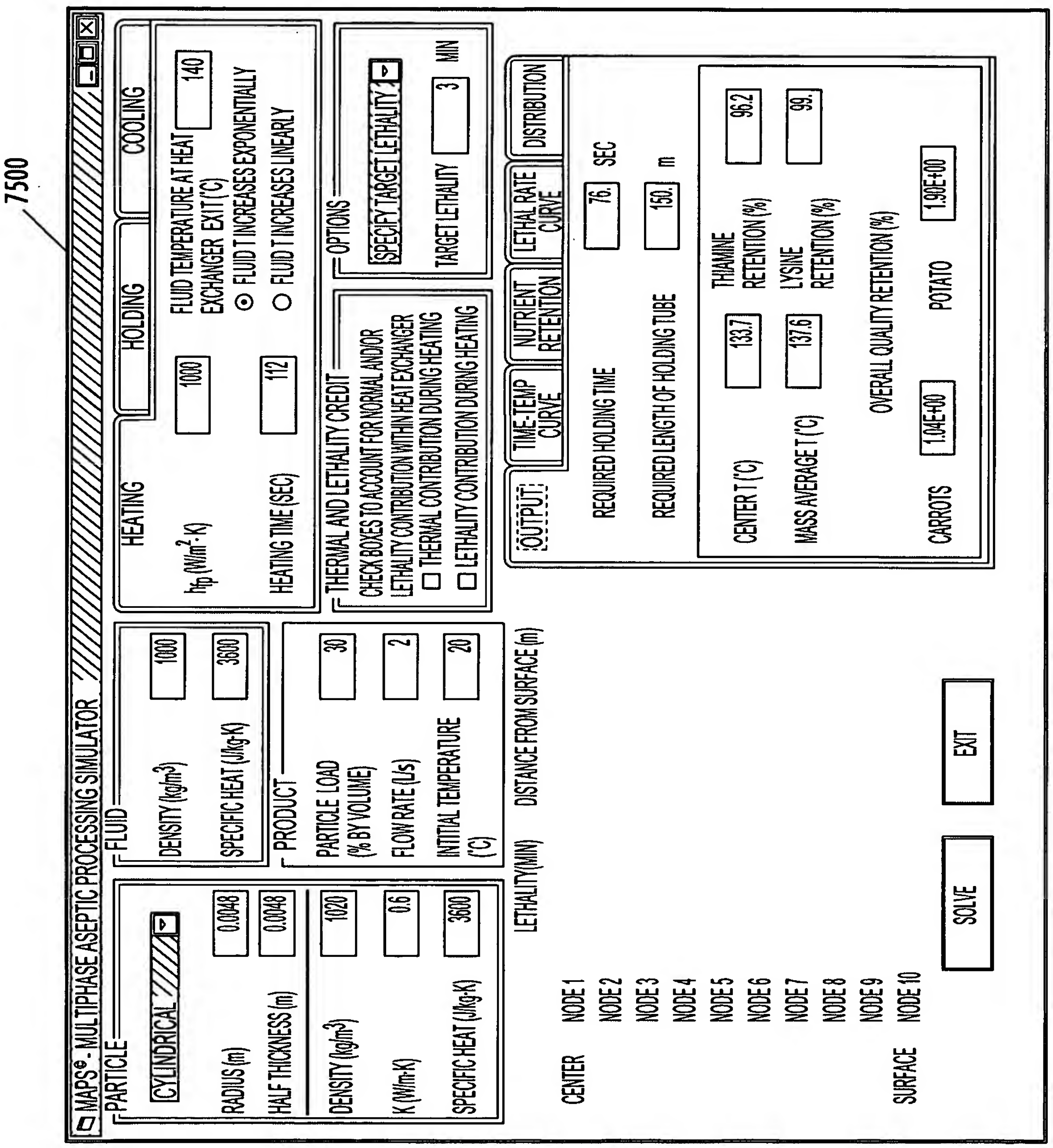

CYLINDRICAL PARTICAL
3/8 IN. X 3/8 IN.
9.5mm
7400
CENTER OF PARTICLE
9.5
mm
7404
7402

FIG. 74

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices
for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2



POTATO
3/8 IN. X 3/8 IN.
Fo(CENTER) = 3 MIN.
TIME = 76.0 s
(HOLDING ONLY)
$\alpha = 1.63 \times 10^{-7}\ m^2/s$

FIG. 75

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

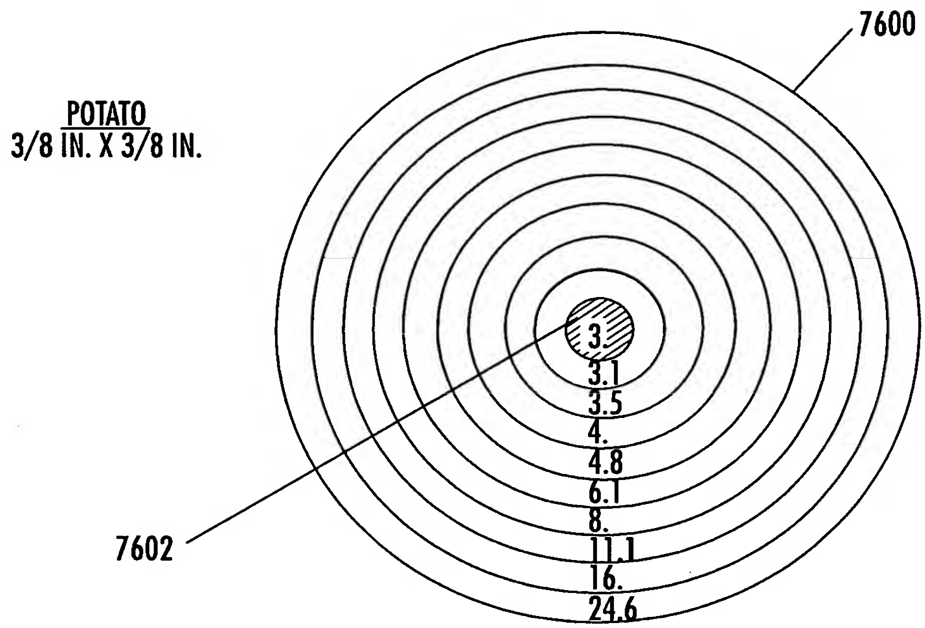
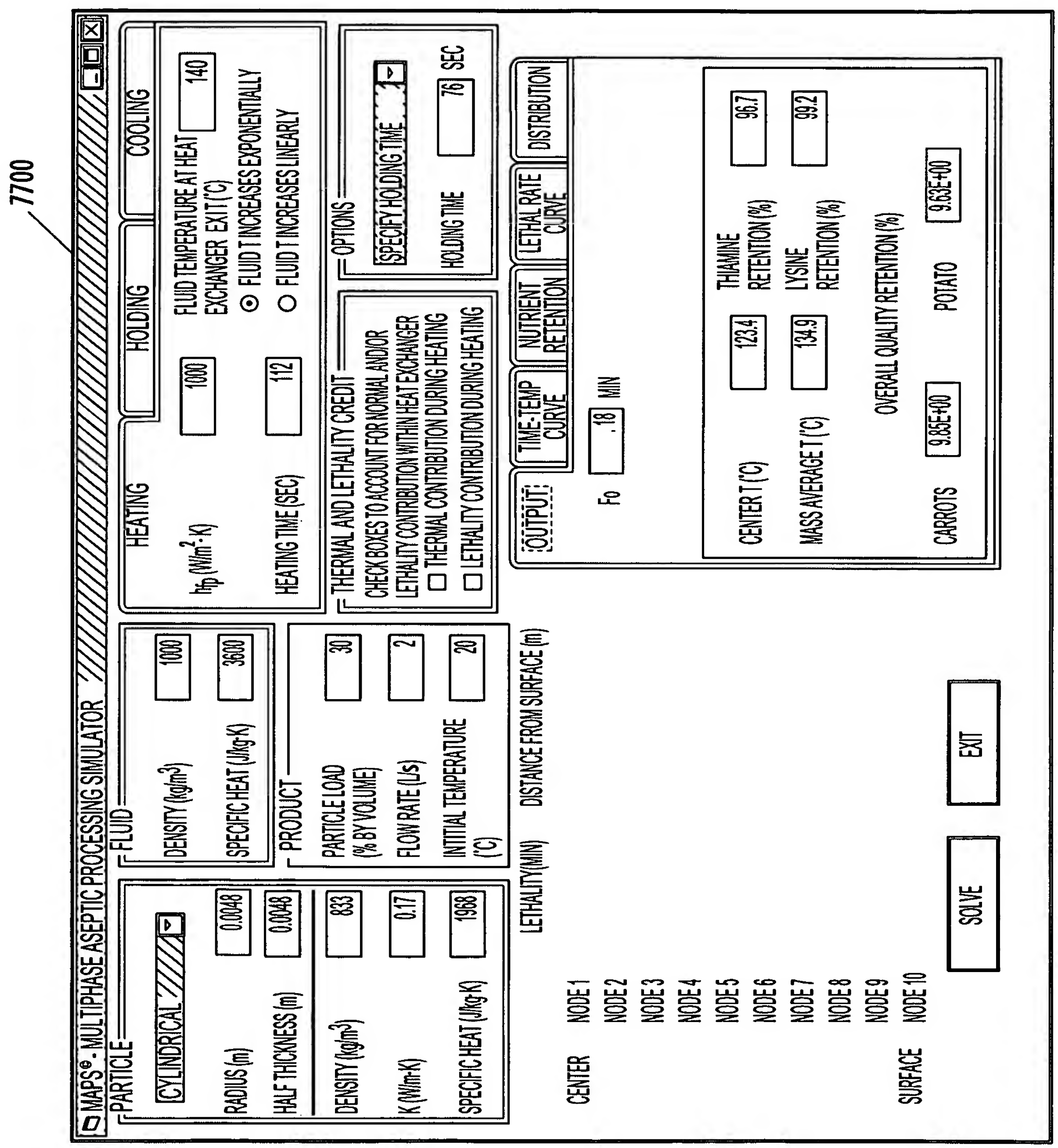


FIG. 76

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2



TPX
3/8 IN. X 3/8 IN.
TIME = 76.0 s
(HOLDING ONLY)
$\alpha = 1.04 \times 10^{-7}\ m^2/s$

FIG. 77

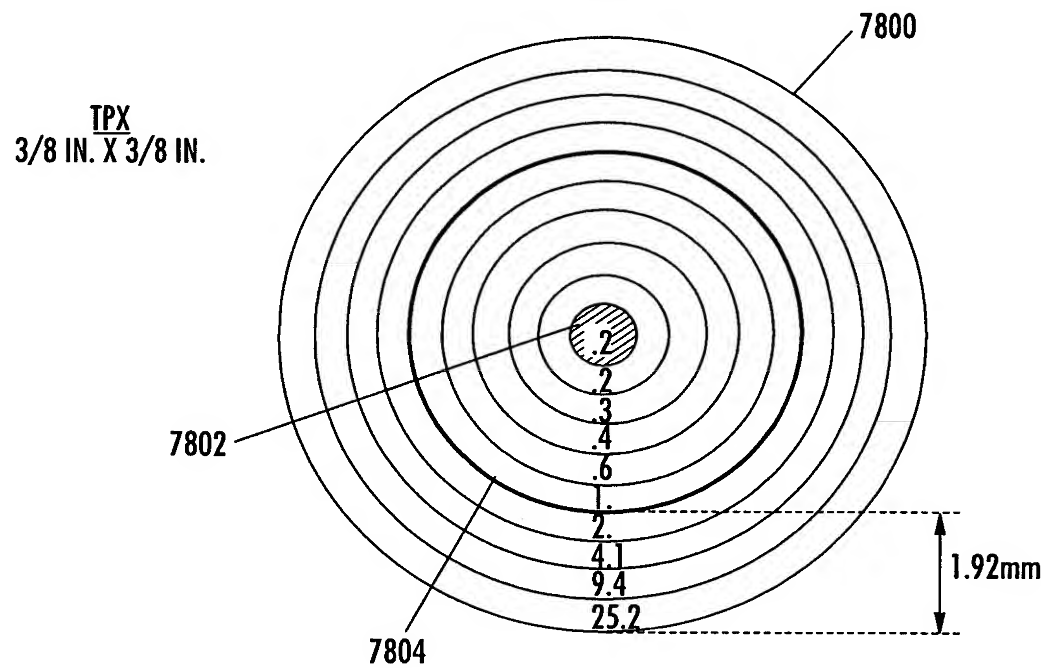
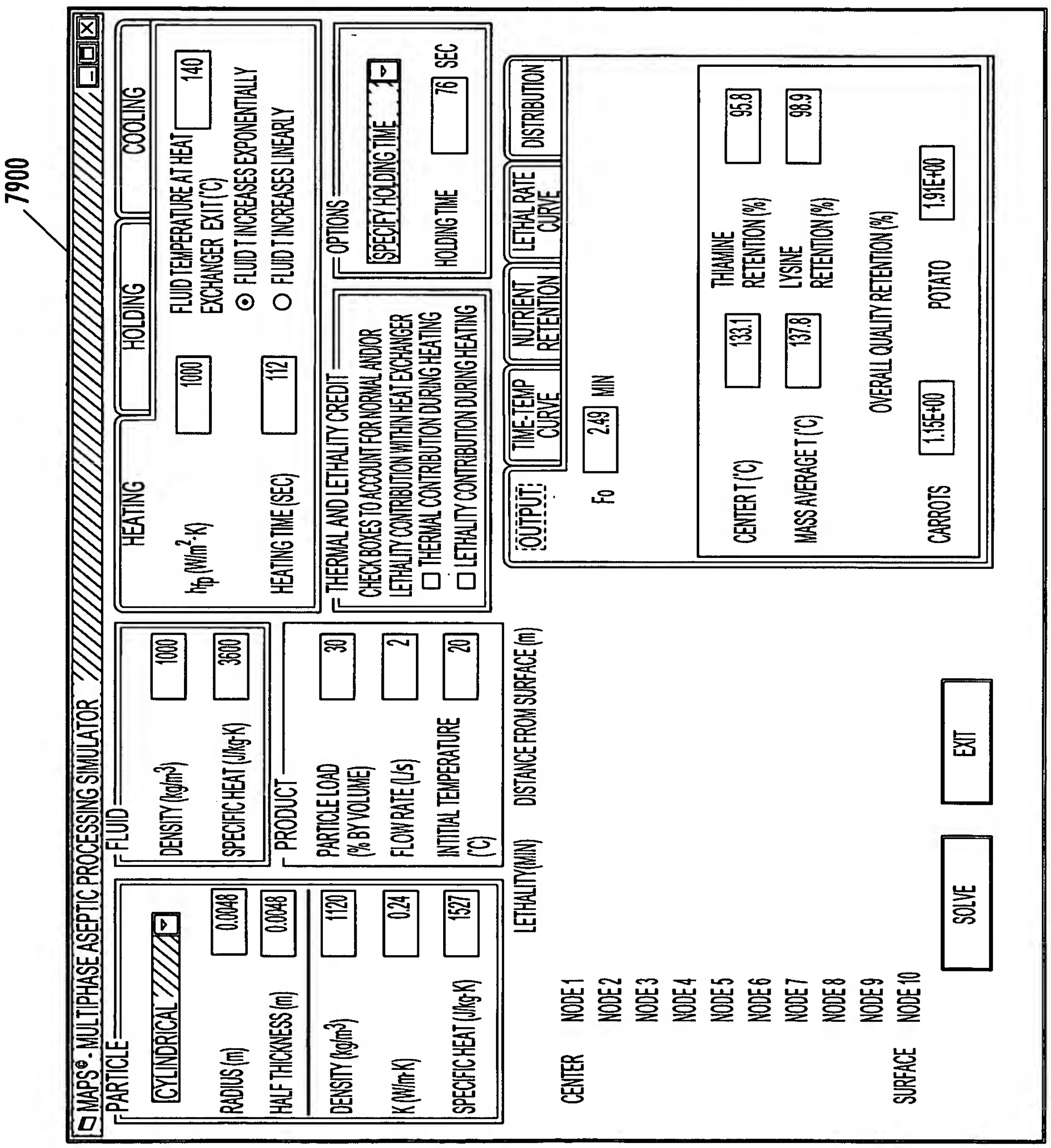


FIG. 78

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices
for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2



NYLON
3/8 IN. X 3/8 IN.
TIME = 76.0 s
(HOLDING ONLY)
$\alpha = 1.40 \times 10^{-7}$ m^2/s

FIG. 79

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

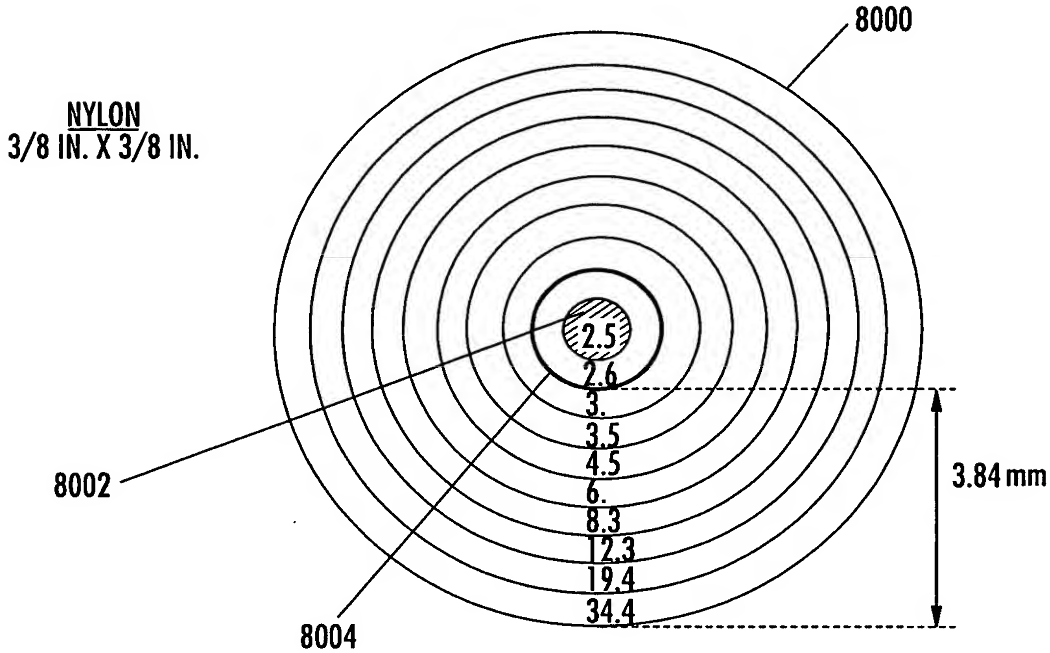
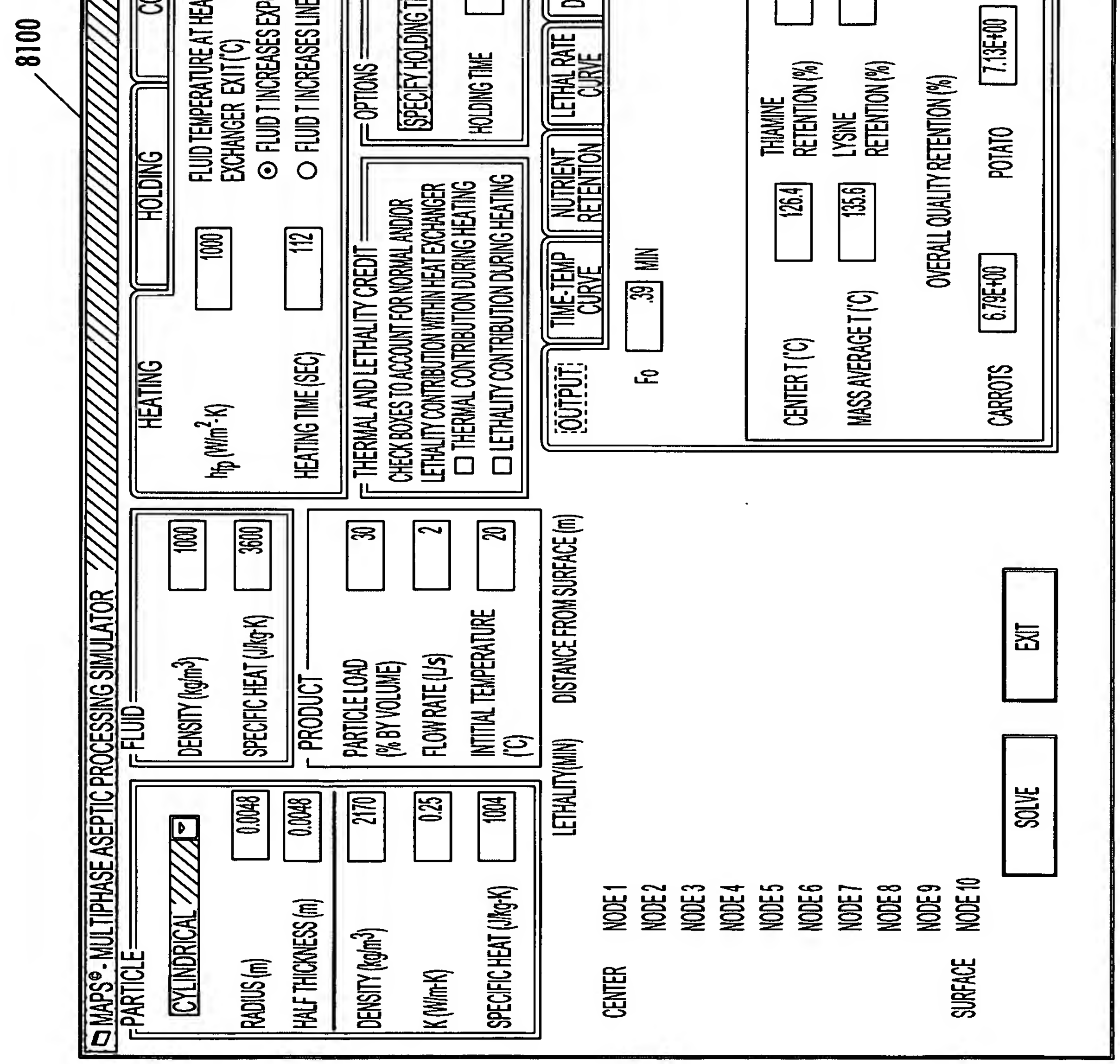


FIG. 80

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices
for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2



TEFLON
3/8 IN. X 3/8 IN.
TIME = 76.0 s
(HOLDING ONLY)
$\alpha = 1.15 \times 10^{-7}$ m2/s

FIG. 81

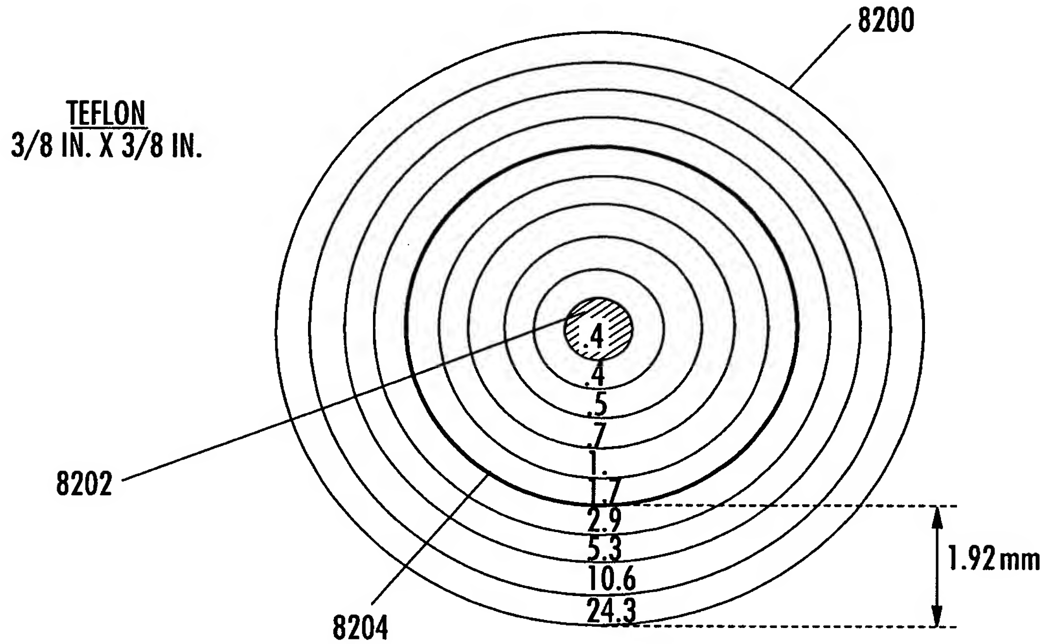
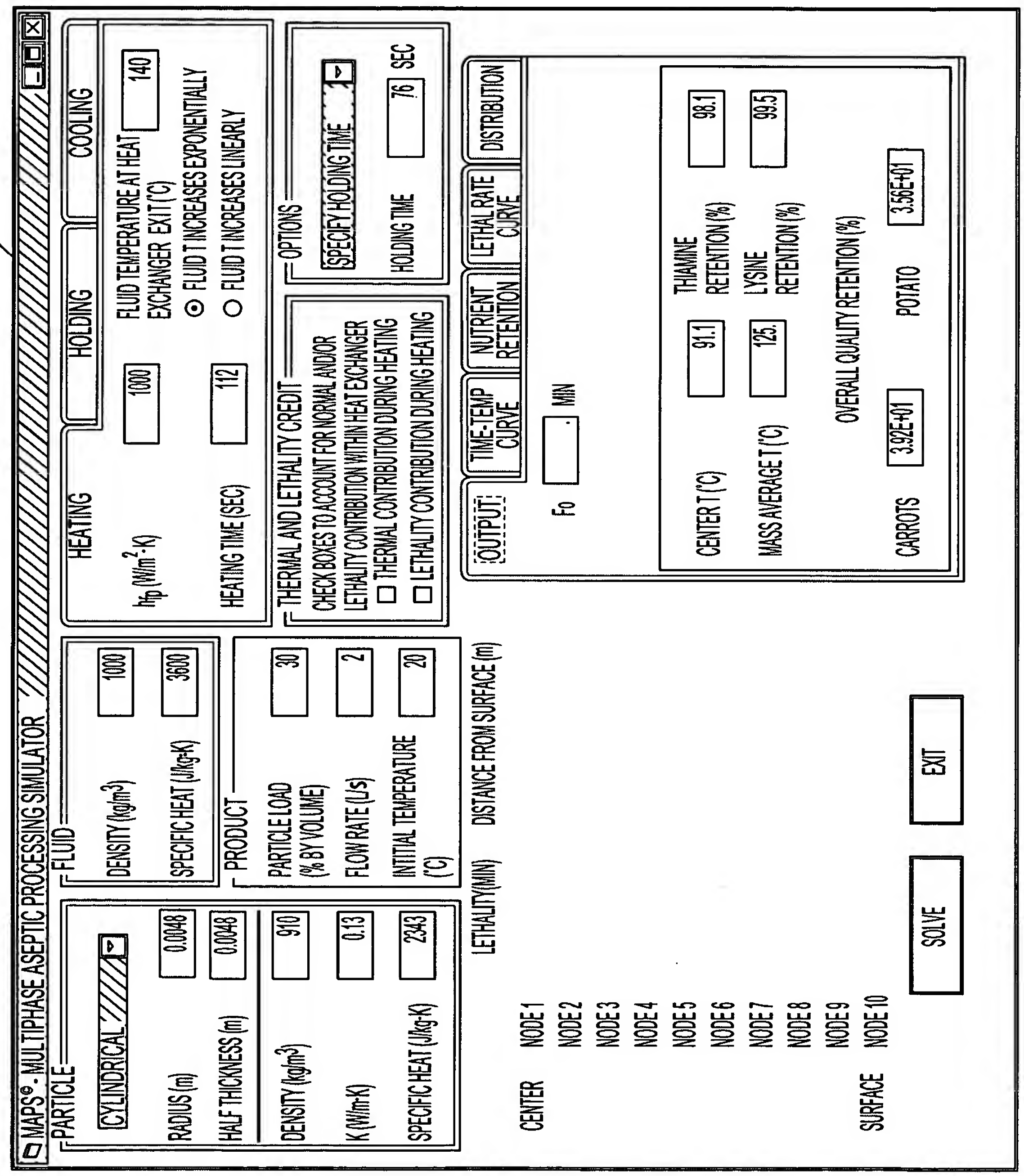


FIG. 82

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

8300



POLYPROPYLENE
3/8 IN. X 3/8 IN.
TIME = 76.0 s
(HOLDING ONLY)
$\alpha = 6.10 \times 10^{-8} m^2/s$

FIG. 83

POLYPROPYLENE
3/8 IN. X 3/8 IN.

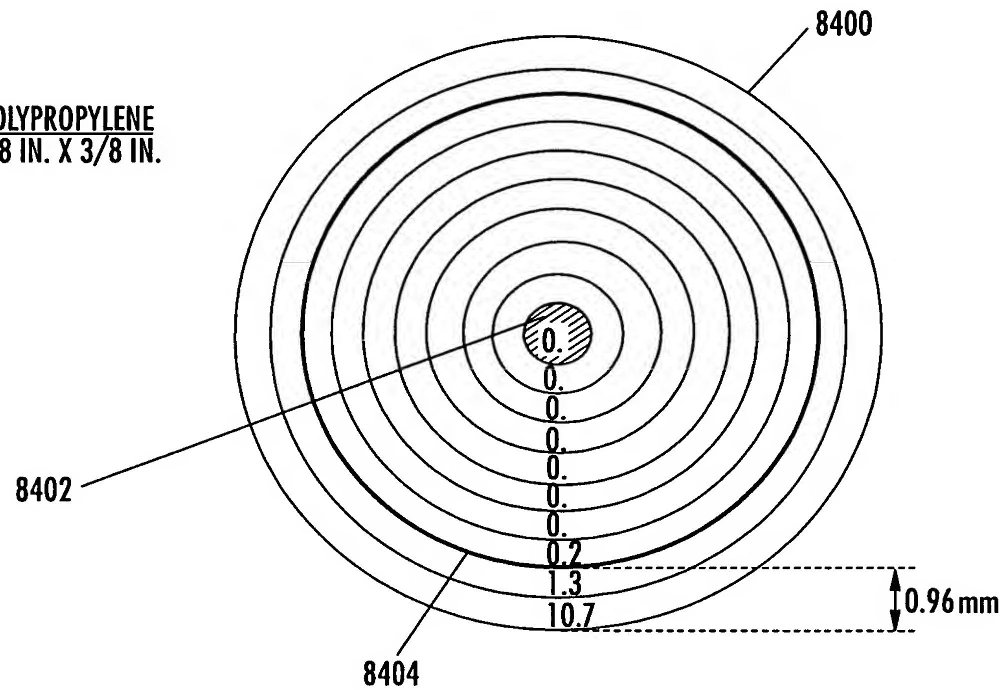


FIG. 84

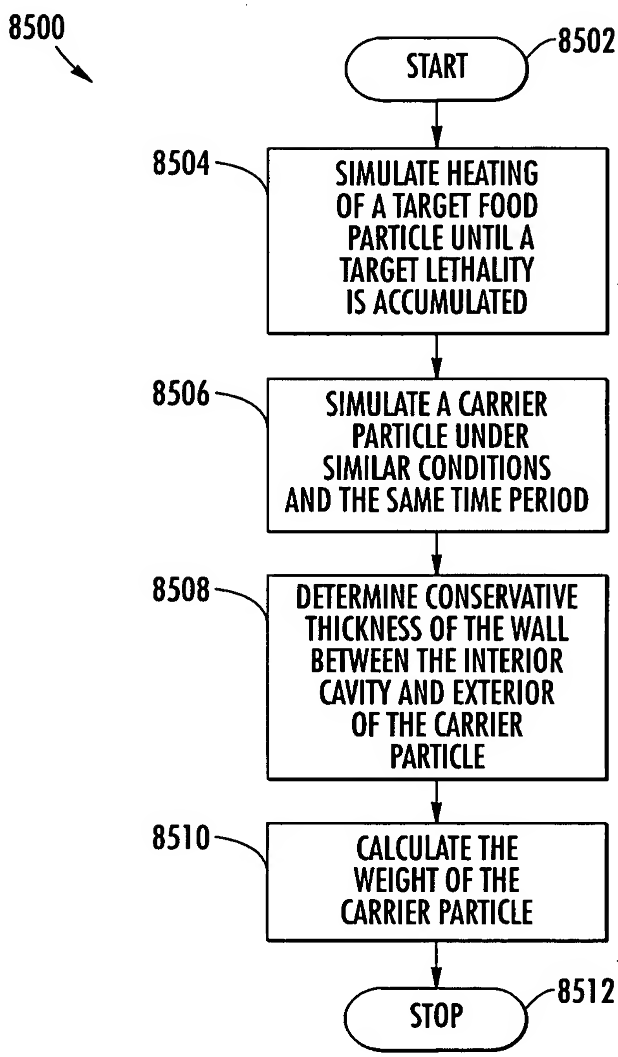

8500
START
8502
8504
SIMULATE HEATING OF A TARGET FOOD PARTICLE UNTIL A TARGET LETHALITY IS ACCUMULATED
8506
SIMULATE A CARRIER PARTICLE UNDER SIMILAR CONDITIONS AND THE SAME TIME PERIOD
8508
DETERMINE CONSERVATIVE THICKNESS OF THE WALL BETWEEN THE INTERIOR CAVITY AND EXTERIOR OF THE CARRIER PARTICLE
8510
CALCULATE THE WEIGHT OF THE CARRIER PARTICLE
STOP
8512

FIG. 85

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

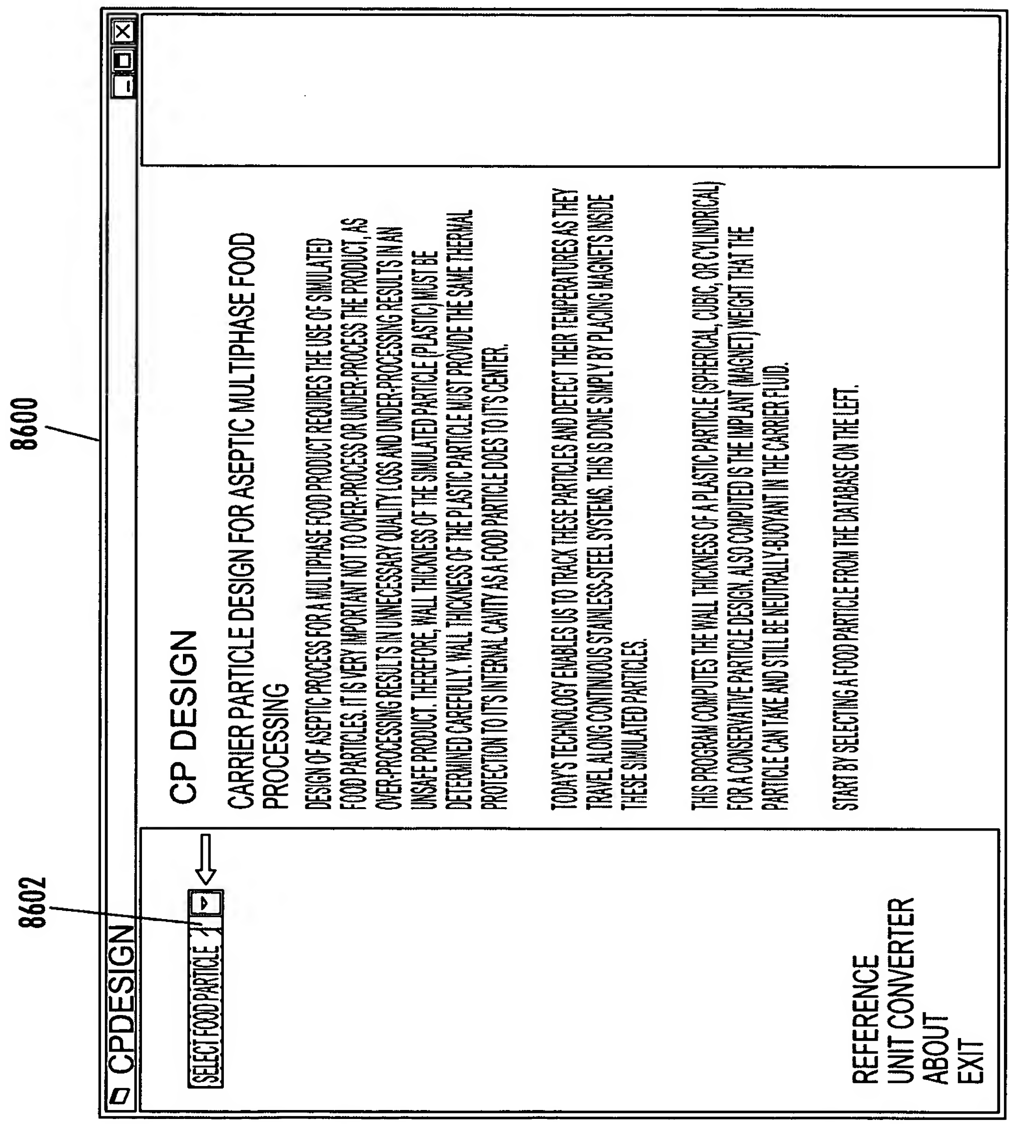


FIG. 86

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

8700

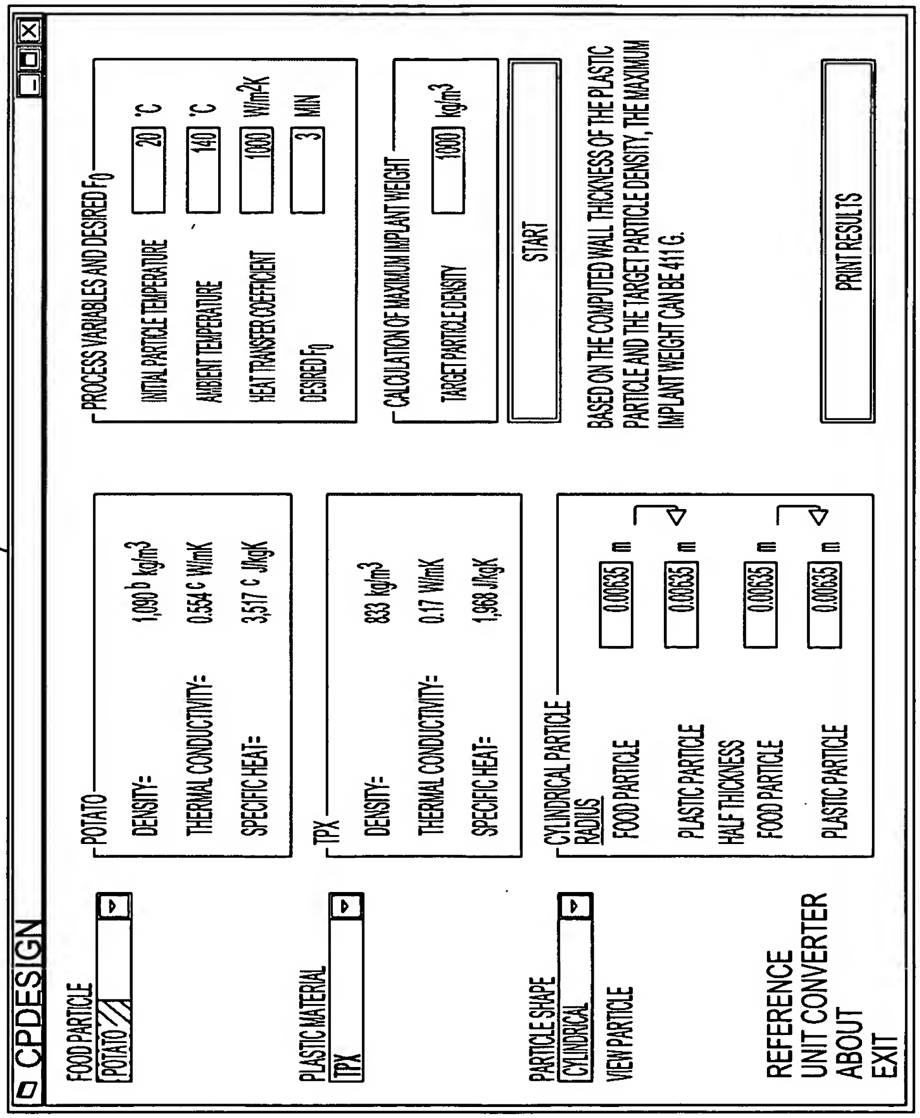


FIG. 87

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

8800

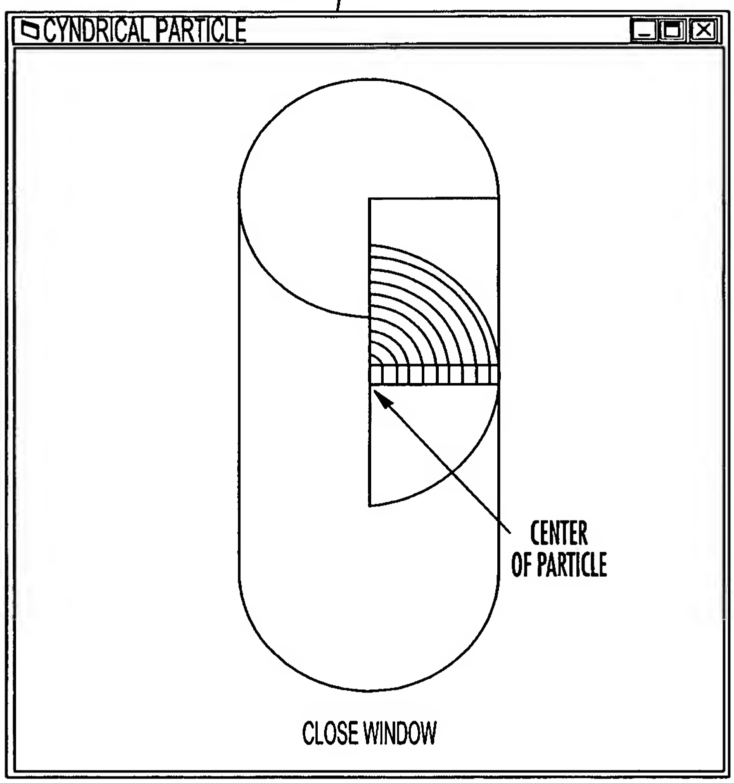


FIG. 88A

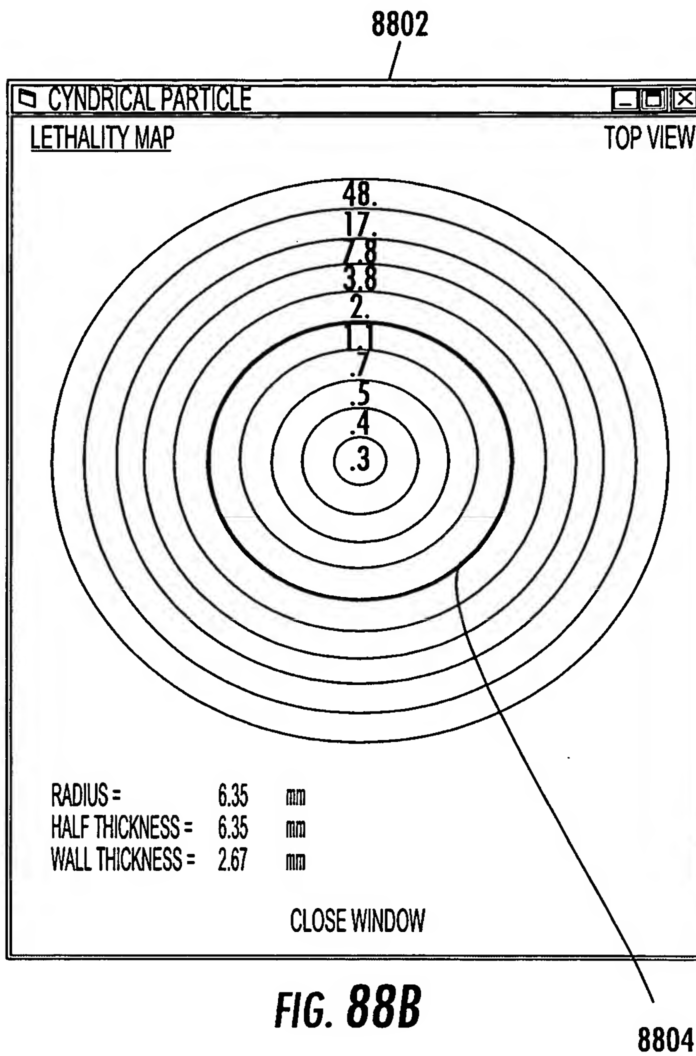

8802
CYNDRICAL PARTICLE
LETHALITY MAP
TOP VIEW
48.
17.
7.8
3.8
2.
1.1
.7
.5
.4
.3
RADIUS = 6.35 mm
HALF THICKNESS = 6.35 mm
WALL THICKNESS = 2.67 mm
CLOSE WINDOW
8804

FIG. 88B

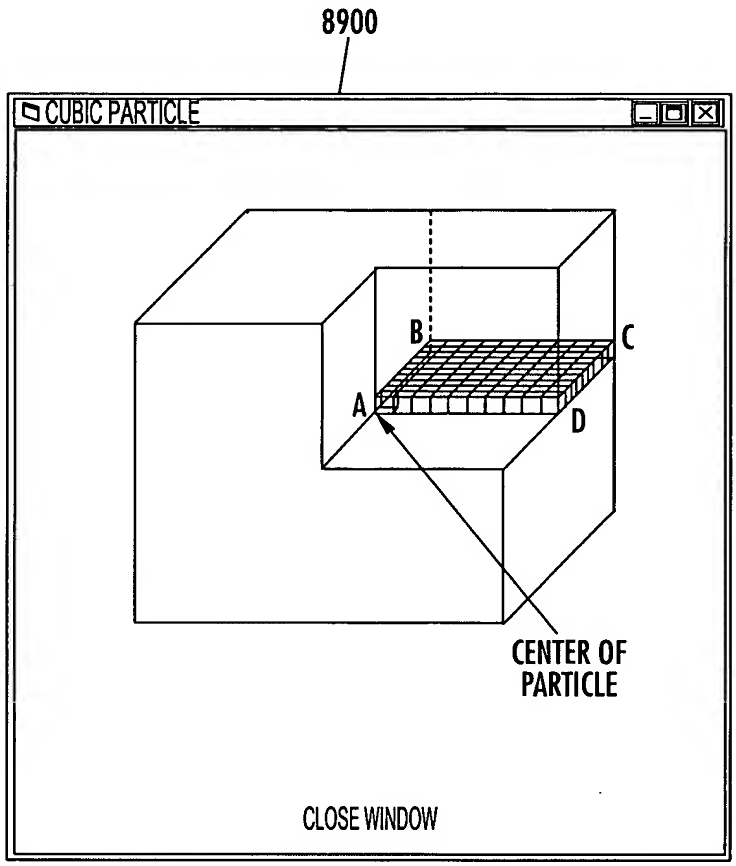
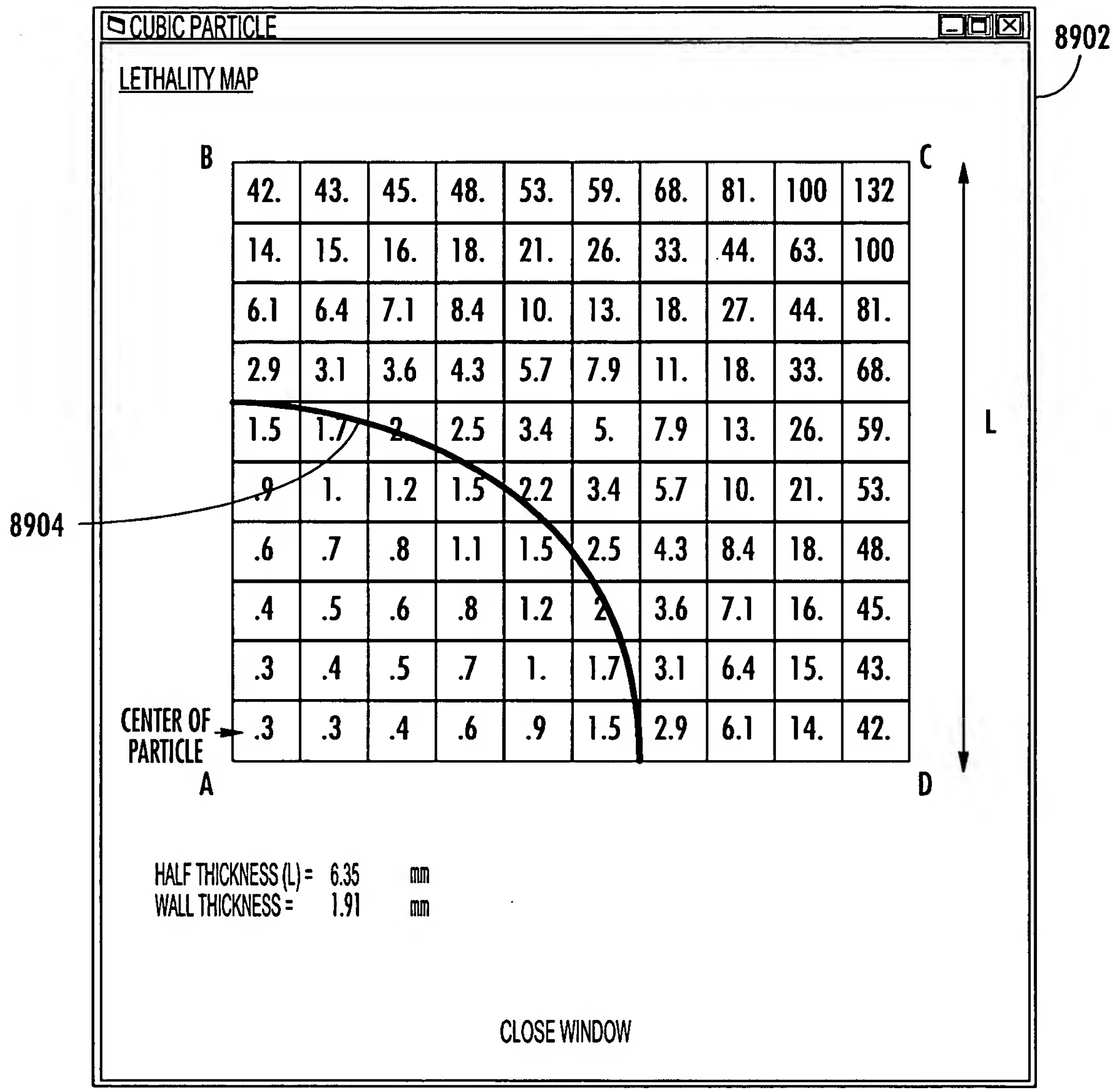


FIG. 89A



42.	43.	45.	48.	53.	59.	68.	81.	100	132
14.	15.	16.	18.	21.	26.	33.	44.	63.	100
6.1	6.4	7.1	8.4	10.	13.	18.	27.	44.	81.
2.9	3.1	3.6	4.3	5.7	7.9	11.	18.	33.	68.
1.5	1.7	2.	2.5	3.4	5.	7.9	13.	26.	59.
.9	1.	1.2	1.5	2.2	3.4	5.7	10.	21.	53.
.6	.7	.8	1.1	1.5	2.5	4.3	8.4	18.	48.
.4	.5	.6	.8	1.2	2	3.6	7.1	16.	45.
.3	.4	.5	.7	1.	1.7	3.1	6.4	15.	43.
.3	.3	.4	.6	.9	1.5	2.9	6.1	14.	42.

FIG. 89B

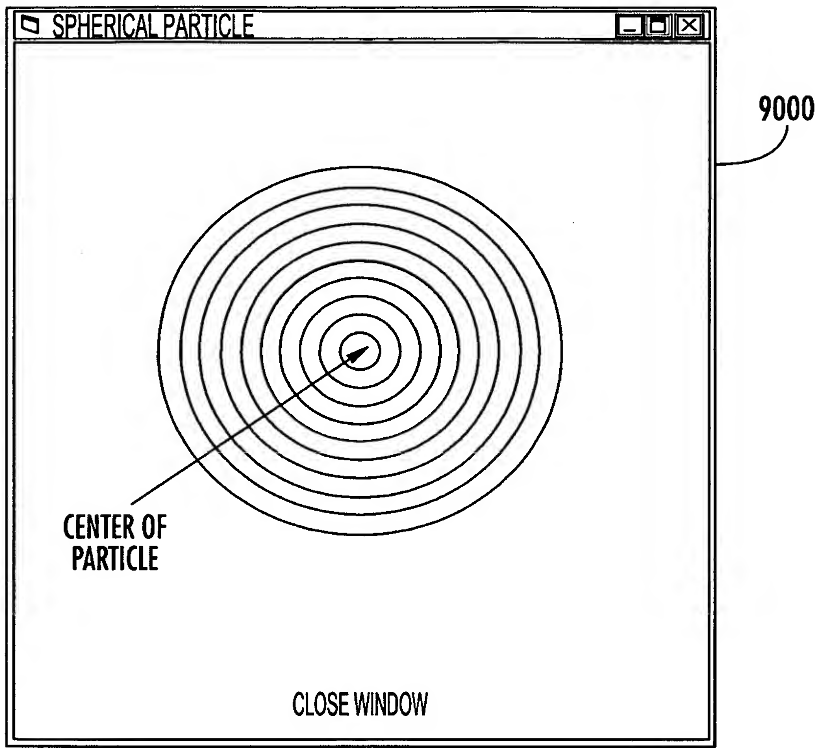


FIG. 90A

REPLACEMENT DRAWING
Title: Methods, Systems, and Devices for Evaluation of Thermal Treatment
Inventors: Palazoglu et al.
Attorney Docket No. 297/164/2

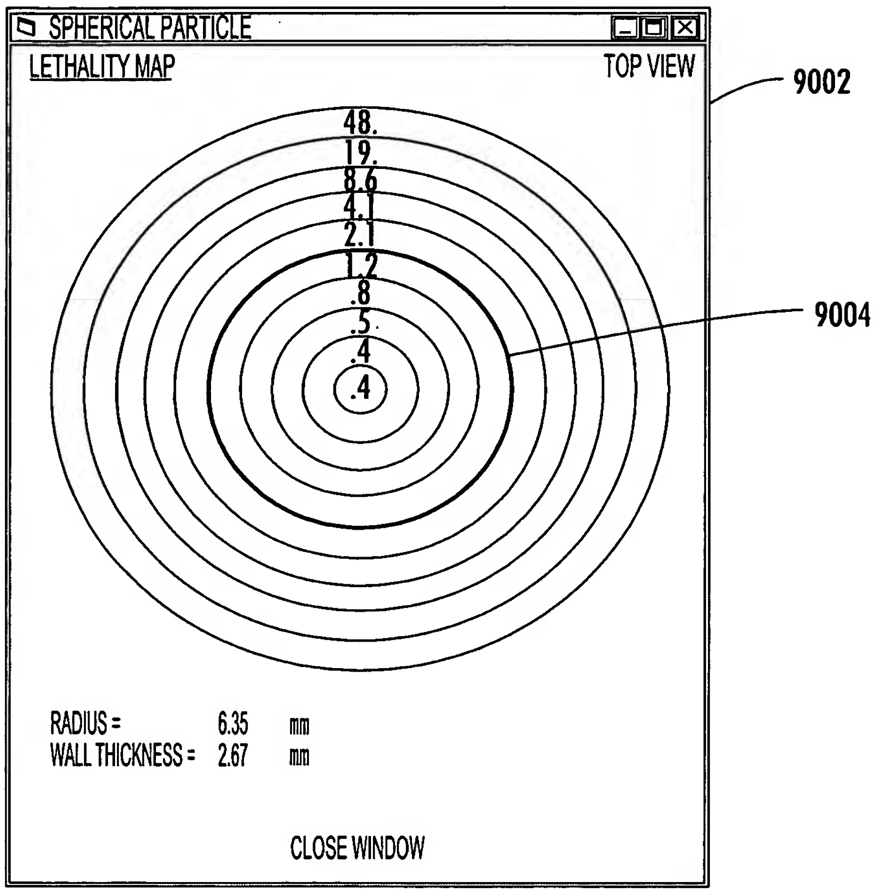


FIG. 90B